

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

January 30, 1973

Dallas

Southern Natural Gas Company
P. O. Box 1513
Houston, Texas 77027

Attention: Mr. Gus Mistrot

Subject: Core Analysis
Dr. D. B. McRae No. 1 Well
Wildcat
Wheeler County, Georgia

Gentlemen:

Diamond conventional coring equipment was used to core the subject well. The core was sampled by an employee of Core Laboratories, Inc. as directed by a representative of the operator. Samples of recovered formation were preserved in plastic bags and transported to our Brewton, Alabama laboratory for analysis. The analysis results are presented in tabular form on pages one through twelve and graphically on the accompanying Correlation Coregraph.

Formation analyzed from 1800 to 1879 feet and 2074 to 2187 feet is interpreted to be water productive where sufficiently permeable.

Side wall samples taken at depths between 1743 and 2591 feet also were submitted for analysis and the data are presented on the Side Wall Core Analysis Data form.

We sincerely appreciate this opportunity to have been of service to you.

Very truly yours,

Core Laboratories, Inc.

Larry E. Tucker

Larry E. Tucker
District Manager

LET:AB:dl
6 cc. - Addressee

CORE ANALYSIS RESULTS

Company SOUTHERN NATURAL GAS CO. Formation _____ File 535-0316C
Well DR. D. R. MCRAE #1 Core Type RUBBER SLEEVE Date Report 12/5/72
Field WILDCAT Drilling Fluid _____ Analysts CAM
County WHEELER State GEORGIA Elev. _____ Location _____

Lithological Abbreviations

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYs	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		INTRP	SAMPLE DESCRIPTION AND REMARKS	
				OIL	TOTAL WATER			
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/

CORE NUMBER 1, 1800-1820; CUT 20 FEET - RECOVERED 20 FEET.

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYs	POROSITY PER CENT	OIL	TOTAL WATER	INTRP	SAMPLE DESCRIPTION AND REMARKS
1	1800-01	.1	9.7	0.	81.4 (6)		SD VFGR VSHY VCALC MICA
2	01-02	15	25.2	0.	89.6 WATER		SD FGR SHY CALC
3	02-03	210	28.5	0.	91.3 WATER		SD FGR SLI SHY CALC MICA
4	03-04	.1	17.8	0.	79.8 (6)		SHALE SDY VCALC MICA
5	04-05	.1	14.8	0.	82.4 (6)		SHALE SDY VCALC MICA
6	05-06	.9	21.1	0.	87.1 (6)		SD VFGR VSHY VCALC MICA
7	06-07	.6	21.5	0.	85.1 (6)		SD VFGR VSHY VCALC MICA
8	07-08	1.0	24.4	0.	79.8 (6)		SD VFGR VSHY VCALC MICA
9	08-09	330	33.4	0.	96.2 WATER		SD VFGR SHY CALC MICA
10	09-10	<.1	12.2	0.	83.6 (6)		SHALE SDY VCALC MICA
11	10-11	.9	20.5	0.	85.8 (6)		SD VFGR VSHY CALC MICA
12	11-12	.4	18.7	0.	87.7 (6)		SD VFGR VSHY CALC MICA
13	12-13	1.0	21.0	0.	91.8 (6)		SD VFGR VSHY CALC MICA
14	13-14	.9	20.7	0.	93.2 (6)		SD VFGR VSHY CALC MICA
15	14-15	<.1	10.2	0.	94.1 (6)		SHALE SDY VCALC MICA
16	15-16	.6	19.3	0.	85.5 (6)		SD VFGR VSHY CALC MICA
17	16-17	<.1	10.9	0.	79.8 (6)		SHALE SDY VCALC MICA
18	17-18	<.1	11.4	0.	85.9 (6)		SHALE SDY VCALC MICA
19	18-19	<.1	11.2	0.	81.9 (6)		SHALE SDY VCALC MICA
20	1819-20	1.5	22.2	0.	82.4 (6)		SD FGR VSHY CALC MICA

* THE INTERVAL 1800-1820 HAS NO ODOR OR FLUORESCENCE.
(6) LOW PERMEABILITY

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Lithological Abbreviations

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SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCY	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		INTRP	SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER		
CORE NUMBER 3, 1840-1860; CUT 20 FEET - RECOVERED 18 FEET.							
27	1840-41	<.1	10.9	0.	92.6 (6)		FOSSILIFEROUS LM SDY LOST CORE
	1841-43						
28	43-44	1850	34.5	0.	95.4 WATER		SD VFGR CLEAN CALC
29	44-45	.9	20.7	0.	88.4 (6)		SD VFGR VSHY VALC MICA
30	45-46	30	22.5	0.	86.1 WATER		SD VFGR SLISHY CALC MICA
31	46-47	11	23.9	0.	83.7 WATER		SD VFGR SHY CALC MICA
32	47-48	12	22.8	0.	88.0 WATER		SD FGR SHY CALC MICA
33	48-49	.6	18.9	0.	82.0 (6)		SD VFGR VSHY CALC MICA
34	49-50	185	28.0	0.	89.3 WATER		SD FGR SLISHY CALC MICA
35	50-51	62	24.0	0.	86.6 WATER		SD FGR SHY CALC MICA
36	51-52	85	26.6	0.	89.4 WATER		SD VFGR SHY CALC MICA
37	52-53	50	26.8	0.	98.4 WATER		SD VFGR SHY CALC MICA
38	53-54	.2	17.3	0.	82.1 (6)		SD VFGR VSHY CALC MICA
39	54-55	150	27.5	0.	94.8 WATER		SD VFGR SLISHY SLICALC MICA
40	55-56	.4	18.6	0.	88.1 (6)		SD VFGR VSHY CALC MICA
41	56-57	.6	19.9	0.	90.0 (6)		SD VFGR VSHY CALC MICA
42	57-58	.9	20.3	0.	80.8 (6)		SD VFGR VSHY SLICALC MICA
43	58-59	.4	18.8	0.	89.9 (6)		SD VFGR VSHY CALC MICA
44	1859-60	.3	18.3	0.	88.4 (6)		SD VFGR VSHY CALC MICA

* THE INTERVAL 1840-1841 HAS MINERAL FLUORESCENCE. ALL OTHER SAMPLES HAD NO ODOR OR FLUORESCENCE.

(6) LOW PERMEABILITY

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

CORE ANALYSIS RESULTS

Company SOUTHERN NATURAL GAS CO. Formation _____ File 535-0316C
Well DR. D. B. MCRAE #1 Core Type DIAMOND Date Report 12/9/72
Field WILDCAT Drilling Fluid _____ Analysts JWH/CAM
County WHEELER State GEORGIA Elev. _____ Location _____

Lithological Abbreviations

SAND-SD SHALE-SH LINE-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-XLM GRAIN-GRM GRANULAR-GRNL BROWN-BRN GRAY-GY VUGGY-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		INTRP	SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER		

2040-2054 DRILLED.

CORE NUMBER 8, 2054-2076; CUT 22 FEET - RECOVERED 22 FEET.

77	2054-55	<0.1	13.7	1.6	91.1 (6)	SH	SDY NO ODR NO FLU
78	55-56	<0.1	12.4	1.7	96.0 (6)	SH	NO ODR NO FLU
79	56-57	<0.1	12.7	1.7	93.3 (6)	SH	SDY NO ODR NO FLU
80	57-58	<0.1	13.3	1.6	92.7 (6)	SH	NO ODR NO FLU
81	58-59	<0.1	12.4	1.7	92.9 (6)	SH	SDY NO ODR NO FLU
82	59-60	<0.1	16.3	1.3	95.5 (6)	SH	SDY NO ODR NO FLU
83	60-61	<0.1	17.5	2.4	94.0 (6)	SH	SDY NO ODR NO FLU
84	61-62	<0.1	16.6	1.3	93.7 (6)	SH	SDY NO ODR NO FLU
85	62-63	<0.1	16.3	2.7	92.9 (6)	SH	SDY NO ODR NO FLU
86	63-64	<0.1	15.6	2.8	92.8 (6)	SH	SDY NO ODR NO FLU
87	64-65	<0.1	17.4	2.6	92.1 (6)	SH	SDY NO ODR NO FLU
88	65-66	<0.1	15.0	2.8	91.0 (6)	SH	SDY NO ODR NO FLU
89	66-67	<0.1	12.8	2.9	89.1 (6)	SH	SDY NO ODR NO FLU
90	67-68	<0.1	15.7	2.8	91.4 (6)	SH	SDY NO ODR NO FLU
91	68-69	<0.1	17.0	2.5	90.9 (6)	SH	SDY NO ODR NO FLU
92	69-70	<0.1	14.8	2.8	90.5 (6)	SH	SDY NO ODR NO FLU
93	70-71	<0.1	15.5	2.7	89.2 (6)	SH	SDY NO ODR NO FLU
94	71-72	<0.1	18.2	2.3	86.4 (6)	SH	SDY NO ODR NO FLU
95	72-73	<0.1	17.4	2.5	86.6 (6)	SH	SDY NO ODR NO FLU
96	73-74	4.2	21.2	3.1	73.3 (6)	SD	SHY NO ODR NO FLU
97	74-75	12	22.5	0.	87.8 WATER	SD	SHY NO ODR NO FLU
98	2075-76	8.7	18.5	.6	79.7 (6)	SD	SHY NO ODR NO FLU

CORE NUMBER 9, 2076-2083; CUT 7 FEET - RECOVERED 2 FEET.

99	2076-77	5.9	21.1	0.	91.5 (6)	SD	SHY NO ODR NO FLU
100	2077-78	16	26.1	0.	90.8 WATER	SD	SHY NO ODR NO FLU

2078-2083 LOST CORE.

(6) LOW PERMEABILITY

CORE LABORATORIES, INC.
 Petroleum Reservoir Engineering
 DALLAS, TEXAS

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Well DR. D. B. MCRAE #1

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYs	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		INTRP	SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER		
135	2117-18	27	20.7	1.0	89.0	WATER	SD SHY NO ODR NO FLU
136	2118-19	8.5	20.4	1.0	90.8	(6)	SD SHY NO ODR NO FLU

2119-2125 LOST CORE.

(6) LOW PERMEABILITY

CORE ANALYSIS RESULTS

Company SOUTHERN NATURAL GAS CO. Formation _____ File 535-0316C
 Well DR. D. B. MCPAE #1 Core Type DIAMOND Date Report 12/11/72
 Field WILDCAT Drilling Fluid _____ Analysts JWH/CAM
 County WHEELER State GEORGIA Elev. _____ Location _____

Lithological Abbreviations

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SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCY	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		INTRP	SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER		

CORE NUMBER 11, 2125-2132; CUT 57 FEET - RECOVERED 57 FEET.

137	2125-26	2.1	16.9	1.9	80.5	(6)	SD SHY NO ODR NO FLU
138	26-27	9.3	14.2	1.5	77.3	(6)	SD SHY NO ODR NO FLU
139	27-28	3.7	15.9	1.3	80.8	(6)	SD SHY NO ODR NO FLU
140	28-29	0.4	11.6	2.1	83.3	(6)	SD SHY NO ODR NO FLU
141	29-30	1.1	14.8	1.4	82.7	(6)	SD SHY NO ODR NO FLU
142	30-31	23	19.9	1.6	85.0	WATER	SD SHY NO ODR NO FLU
143	31-32	19	20.7	1.0	82.8	WATER	SD SHY NO ODR NO FLU
144	32-33	42	21.0	1.0	83.4	WATER	SD SHY NO ODR NO FLU
145	33-34	5.7	13.8	1.5	76.5	(6)	SD SHY NO ODR NO FLU
146	34-35	59	19.3	1.7	85.2	WATER	SD SHY NO ODR NO FLU
147	35-36	8.3	15.8	1.4	86.3	(6)	SD SHY NO ODR NO FLU
148	36-37	3.7	15.2	1.4	82.0	(6)	SD SHY NO ODR NO FLU
149	37-38	3.1	15.8	1.4	81.6	(6)	SD SHY NO ODR NO FLU
150	38-39	6.4	15.2	1.4	80.2	(6)	SD SHY NO ODR NO FLU
151	39-40	2.2	13.9	2.3	83.2	(6)	SD SHY NO ODR NO FLU
152	40-41	12	14.1	1.6	82.6	WATER	SD SHY NO ODR NO FLU
153	41-42	1.9	13.7	1.6	82.4	(6)	SD SHY NO ODR NO FLU
154	42-43	4.6	13.6	1.6	78.4	(6)	SD SHY NO ODR NO FLU
155	43-44	5.8	12.7	1.7	80.2	(6)	SD SHY NO ODR NO FLU
156	44-45	2.3	13.7	1.6	81.7	(6)	SD SHY NO ODR NO FLU
157	45-46	31	18.3	1.2	88.2	WATER	SD SHY NO ODR NO FLU
158	46-47	14	12.8	1.7	85.0	WATER	SD SHY NO ODR NO FLU
159	47-48	0.8	11.8	1.0	83.8	(6)	SD SHY NO ODR NO FLU
160	48-49	0.3	11.5	2.1	84.8	(6)	SD SHY NO ODR NO FLU
161	49-50	9.2	20.8	1.0	88.9	(6)	SD SHY NO ODR NO FLU
162	50-51	27	19.2	1.7	89.5	WATER	SD SHY NO ODR NO FLU
163	51-52	41	18.8	1.1	89.3	WATER	SD SHY NO ODR NO FLU
164	52-53	11	13.0	.9	82.8	WATER	SD SHY NO ODR NO FLU
165	53-54	8.5	12.5	1.8	85.1	(6)	SD SHY NO ODR NO FLU
166	54-55	<0.1	11.0	1.9	87.3	(6)	SH SDY NO ODR NO FLU
167	55-56	<0.1	11.1	5.7	84.0	(6)	SH SDY NO ODR NO FLU
168	56-57	<0.1	10.8	2.0	84.5	(6)	SH SDY NO ODR NO FLU
169	57-58	<0.1	10.3	2.1	85.7	(6)	SH SDY NO ODR NO FLU
170	2158-59	<0.1	10.6	2.1	86.3	(6)	SH SDY NO ODR NO FLU

(6) LOW PERMEABILITY.

CORE LABORATORIES, INC.
 Petroleum Reservoir Engineering
 DALLAS, TEXAS

File 535-0316C Page No. 11

Well DR. D. R. MCRAE #1

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYs	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		INTRP	SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER		
171	2159-60	0.2	11.3	1.9	82.3 (6)	SH	SDY NO ODR NO FLU
172	60-61	<0.1	8.9	2.5	73.6 (6)	SH	SDY NO ODR MINERAL
173	61-62	0.7	14.6	2.3	77.4 (6)	SD	SHY NO ODR NO FLU
174	62-63	2.6	13.5	1.7	79.9 (6)	SD	SHY NO ODR NO FLU
175	63-64	0.4	11.9	1.0	77.2 (6)	SD	SHY NO ODR NO FLU
176	64-65	7.9	17.6	.7	88.6 (6)	SD	SHY NO ODR NO FLU
177	65-66	10	17.1	.7	80.7 WATER	SD	SHY NO ODR NO FLU
178	66-67	33	19.9	.5	77.8 WATER	SD	SHY NO ODR NO FLU
179	67-68	0.8	11.2	.9	70.9 (6)	SH	SDY NO ODR NO FLU
180	68-69	4.3	15.2	.7	83.8 (6)	SD	SHY NO ODR NO FLU
181	69-70	9.1	15.0	.7	86.1 (6)	SD	SHY NO ODR NO FLU
182	70-71	0.2	13.1	1.6	82.2 (6)	SH	SDY NO ODR NO FLU
183	71-72	1.3	16.5	0.	75.9 (6)	SD	SHY NO ODR NO FLU
184	72-73	9.8	14.2	0.	85.2 (6)	SD	SHY NO ODR NO FLU
185	73-74	11	13.4	0.	82.1 WATER	SD	SHY NO ODR NO FLU
186	74-75	19	17.2	0.	86.3 WATER	SD	SHY NO ODR NO FLU
187	75-76	295	25.9	0.	84.4 WATER	SD	SHY NO ODR NO FLU
188	76-77	8.5	14.6	0.	87.1 (6)	SD	SHY NO ODR NO FLU
189	77-78	0.2	13.5	1.6	81.0 (6)	SH	SDY NO ODR NO FLU
190	78-79	<0.1	12.8	1.7	81.3 (6)	SH	SDY NO ODR NO FLU
191	79-80	0.2	15.4	1.2	84.4 (6)	SD	SHY NO ODR NO FLU
192	80-81	<0.1	14.9	1.5	81.6 (6)	SH	SDY NO ODR NO FLU
193	2181-82	<0.1	14.4	1.5	80.5 (6)	SH	SDY NO ODR NO FLU

(6) LOW PERMEABILITY.

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Lithological Abbreviations

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SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCY	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		INTRP	SAMPLE DESCRIPTION AND REMARKS
				OIL	TOTAL WATER		

CORE NUMBER 12, 2182-2240; CUT 58 FEET - RECOVERED 8 FEET.

194	2182-83	0.1	13.0	1.6	80.7	(6)	SD	NO ODR NO FLU
195	83-84	1.5	14.2	1.5	81.1	(6)	SD	SHY NO ODR NO FLU
196	84-85	0.8	3.7	0.	84.0	(6)	LM	SDY NO ODR MINERAL
197	85-86	2.3	4.8	0.	81.9	(6)	LM	SDY NO ODR MINERAL
198	86-87	12	9.0	0.	84.6	WATER	SD	NO ODR MINERAL
199	87-88	3.1	9.0	0.	80.9	(6)	SD	NO ODR MINERAL
200	88-89	0.6	5.6	0.	69.3	(6)	LM	SDY NO ODR MINERAL
201	2189-90	1.4	9.4	0.	79.5	(6)	LM	SDY NO ODR MINERAL

2190-2240 LOST CORE.

(6) LOW PERMEABILITY.