

23-28-2000
15-06-2000

CORE ANALYSIS REPORT

FOR

CITIES SERVICE COMPANY
GANO NO. B-3 WELL
GRANT COUNTY, KANSAS

TO:



Martin Dubois

Research Geologist, Petroleum Research

Kansas Geological Survey

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12 pages

From: Sid Langson
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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering

OKLAHOMA CITY, OKLAHOMA

March 17, 1982

REPLY TO
SUITE 133
400 SOUTH VERMONT
OKLAHOMA CITY, OK
73108

Cities Service Company
3545 N. W. 58th Street
Oklahoma City, Oklahoma 73112

Attn: Mr. Scott Kinney

Subject: Core Analysis Data
Gano No. B-3 Well
Grant County, Kansas
CLI File 3402-11194

Gentlemen:

Cores taken in the subject well in the Hugoton formation were received at the Oklahoma City laboratory for special analytical testing described on the Procedure Page.

The accompanying Coregraph presents the Surface Core-Gamma Log and binomially averaged core analysis data in graphical form to aid correlation with downhole electrical surveys.

Tabular presentation of the measured physical properties may be found on pages one through eight of this report.

It is a pleasure to have this opportunity of serving you.

Very truly yours,

CORE LABORATORIES, INC.

J. Michael Edwards

J. Michael Edwards
District Manager

5 cc - Addressee

Cities Service Company
Gano No. B-3 Well
3402-11194

Procedure Page

Handling and Analytical Procedures

Diamond coring equipment and water base mud were used to obtain 4.0 inch diamond cores between 2490.0 and 2730.0 feet

The cores were preserved at the well site in a CO-2 atmosphere by CLI personnel.

The cores were transported to Oklahoma City by CLI personnel.

A Core-Gamma Log was recorded for downhole electric log correlation.

Core analysis was made in the intervals requested on right cylinder full diameter samples.

Fluid removal was accomplished using vacuum retorts.

Porosity was determined by density balance method.

Air permeability in two horizontal directions was measured without Klinkenberg correction.

Cores have been shipped to:

Cities Service Technical Center
Tulsa, Oklahoma

CITIES SERVICE COMPANY
GANO NO. B-3 WELL
GRANT COUNTY, KANSAS

DATE: 3-16-82
FORMATION: HUGOTON
DRLG. FLUID: WATER BASE MUD
LOCATION: SEC. 23-28S-36W

FILE NO: 3402-11194
ANALYST: EDWARDS
LABORATORY: OKLAHOMA CITY

FULL DIAMETER ANALYSIS

SAMPLE NUMBER	DEPTH FEET	PERM MD MAXIMUM	PERM MD 90 DEG	POR %	OIL% PORE	WTR% PORE	GRAIN DEN	DESCRIPTION
	2490.0-91.0							ANHY
+ 1	2491.0-92.0	354	354	19.4	0.0	59.2	2.73	SLT/STN,DOL,SHY
+ 2	2492.0-93.0	261	223	15.6	0.0	65.0	2.70	SLT/STN,DOL
3	2493.0-94.0	154	144	17.0	0.0	68.8	2.72	SLT/STN,DOL
	2494.0-95.0							ANHY
4	2495.0-96.0	0.78	0.39	1.9	0.0	88.2	2.93	SLT/STN,DOL,ANHY
5	2496.0-97.0	1.30	1.20	1.6	0.0	93.7	2.93	ANHY,SLTY,DOL
+ 6	2497.0-98.0	137	132	16.5	0.0	69.7	2.74	ANHY,SLTY,DOL
	2498.0-99.0							ANHY
+ 7	2499.0- 0.0	1.70	1.10	7.5	0.0	40.7	2.72	SLT/STN,DOL
+ 8	2500.0- 1.0	160	157	11.6	0.0	60.0	2.72	SLT/STN,DOL
+ 9	2501.0- 2.0	29	18	8.3	0.0	95.0	2.89	SLT/STN,DOL,ANHY
10	2502.0- 3.0	23	0.85	2.1	0.0	95.0	2.94	ANHY,SLTY
11	2503.0- 4.0	1.80	1.40	1.1	0.0	90.0	2.95	ANHY,SLTY
12	2504.0- 5.0	9.40	3.60	2.8	0.0	82.4	2.93	ANHY,SLTY
+ 13	2505.0- 6.0	212	96	14.2	0.0	71.9	2.69	ANHY,SHY
+ 14	2506.0- 7.0	66	50	6.0	0.0	91.7	2.90	ANHY,SLTY
+ 15	2507.0- 8.0	118	73	9.0	0.0	94.4	2.81	DOL,SDY
+ 16	2508.0- 9.0	136	103	19.9	0.0	41.9	2.66	SLT/STN
	2509.0-10.0							ANHY
+ 17	2510.0-11.0	*	114	19.5	0.0	54.7	2.66	SLT/STN
#+ 18	2511.0-12.0	80	21	7.6	0.0	97.5	2.79	SLT/STN,SL/DOL,SHY
+ 19	2512.0-13.0	188	121	10.9	0.0	95.3	2.78	SD,SLTY,DOL
20	2513.0-14.0	4.00	0.65	8.3	0.0	90.5	2.82	SD,SLTY,DOL,SHY,ANHY
21	2514.0-15.0	0.04	0.03	7.9	0.0	93.5	2.77	SD,SLTY,DOL,SHY,ANHY
22	2515.0-16.0	2.30	0.35	6.8	0.0	92.6	2.84	SD,SLTY,DOL,SHY,ANHY
23	2516.0-17.0	1.60	1.30	6.1	0.0	93.9	2.84	SD,SLTY,DOL,SHY,ANHY

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CITIES SERVICE COMPANY
GANO NO. B-3 WELL

DATE: 3-16-82
FORMATION: HUGOTON

FILE NO: 3402-11194
ANALYST: EDWARDS

FULL DIAMETER ANALYSIS

SAMPLE NUMBER	DEPTH FEET	PERM MD MAXIMUM	PERM MD 90 DEG	POR %	OIL% PORE	WTR% PORE	GRAIN DEN	DESCRIPTION
+ 24	2517.0-18.0	*	25	6.2	0.0	93.7	2.80	SD,SLTY,DOL,ANHY
+ 25	2518.0-19.0	67	64	8.1	0.0	74.6	2.77	SD,SLTY,DOL,ANHY
#+ 26	2519.0-20.0	26	25	7.6	0.0	92.2	2.82	SD,SLTY,DOL,ANHY
	2520.0-21.0							ANHY
+ 27	2521.0-22.0	24	0.55	10.3	0.0	85.3	2.78	SD,SLTY,DOL,ANHY
+ 28	2522.0-23.0	128	92	8.8	0.0	98.9	2.71	SD,SLTY,DOL
#+ 29	2523.0-24.0	*	548	17.0	0.0	60.8	2.67	SD,SLTY
#+ 30	2524.0-25.0	486	405	12.8	0.0	54.6	2.68	SLT/STN,DOL
#+ 31	2525.0-26.0	147	120	16.2	0.0	64.7	2.69	SLT/STN,DOL
+ 32	2526.0-27.0	390	109	16.9	0.0	69.1	2.73	SLT/STN,DOL
33	2527.0-28.0	53	14	5.4	0.0	92.7	2.86	SLT/STN,DOL,ANHY
34	2528.0-29.0	115	76	15.8	0.0	58.0	2.70	SLT/STN,DOL
# 35	2529.0-30.0	*	128	15.5	0.0	69.8	2.68	SLT/STN,DOL
# 36	2530.0-31.0	134	89	15.0	0.0	61.0	2.69	SLT/STN,DOL,ANHY
# 37	2531.0-32.0	228	177	18.4	0.0	68.9	2.68	SLT/STN,DOL
# 38	2532.0-33.0	38	37	13.5	0.0	69.1	2.67	SLT/STN,DOL
# 39	2533.0-34.0	53	51	12.6	0.0	71.0	2.69	SLT/STN,DOL
40	2534.0-35.0	0.03	0.02	0.6	0.0	85.7	2.96	ANHY,SDY
41	2535.0-36.0	0.07	0.01	0.7	0.0	87.5	2.94	ANHY,SDY
#+ 42	2536.0-37.0	128	102	12.1	0.0	96.5	2.74	SLT/STN,SL/DOL
+ 43	2537.0-38.0	383	354	12.4	0.0	96.3	2.80	SD,SLTY,SHY,LMY
44	2538.0-39.0	16	0.14	6.7	0.0	74.0	2.71	SD,SLTY,SHY,LMY,VF
45	2539.0-40.0	261	0.74	7.0	0.0	85.5	2.68	SD,SLTY,SHY,LMY
46	2540.0-41.0	7.00	4.80	17.6	0.0	62.2	2.75	SD,SLTY,SHY,LMY,VF
47	2541.0-42.0	*	3.80	13.5	0.0	67.4	2.69	SD,SLTY,SHY,LMY
48	2542.0-43.0	8.70	7.40	19.9	0.0	60.5	2.82	DOL,SHY
49	2543.0-44.0	*	4.60	15.3	0.0	63.3	2.80	DOL,SHY
50	2544.0-45.0	*	2.6	18.5	0.0	65.4	2.83	DOL,SHY
51	2545.0-45.5	*	4.00	13.8	0.0	94.5	2.82	DOL,SHY

2545.5-2550.0 LOST CORE

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CITIES SERVICE COMPANY
GANO NO. B-3 WELL

DATE: 3-16-82
FORMATION: HUGOTON

FILE NO: 3402-11194
ANALYST: EDWARDS

FULL DIAMETER ANALYSIS

SAMPLE NUMBER	DEPTH FEET	PERM MD MAXIMUM	PERM MD 90 DEG	POR %	OIL% PORE	WTR% PORE	GRAIN DEN	DESCRIPTION
+ 52	2550.0-51.0	16	8.20	9.3	0.0	88.5	2.80	SD,SLTY,DOL,ANHY
53	2551.0-52.0	0.44	0.24	14.6	0.0	70.2	2.78	SD,SLTY,DOL,ANHY
+ 54	2552.0-53.0	1.90	0.64	14.8	0.0	68.9	2.79	SD,SLTY,DOL,ANHY
55	2553.0-54.0	0.19	0.13	19.8	0.0	66.1	2.79	SD,SLTY,DOL,ANHY
#+ 56	2554.0-55.0	28	21	10.3	0.0	90.1	2.80	SD,SLTY,DOL
#+ 57	2555.0-56.0	0.68	0.52	11.5	0.0	83.3	2.79	SD,SLTY,DOL,ANHY
+ 58	2556.0-57.0	7.30	1.40	13.3	0.0	71.6	2.82	DOL,SDY,ANHY,VF
+ 59	2557.0-58.0	45	35	12.0	0.0	82.8	2.79	DOL,SDY,ANHY
60	2558.0-59.0	1.70	1.50	14.2	0.0	65.2	2.83	DOL,ANHY
61	2559.0-60.0	0.74	0.45	13.1	0.0	59.3	2.85	DOL,ANHY
62	2560.0-61.0	1.00	0.47	12.8	0.0	58.6	2.84	DOL,ANHY,PP VGS
+ 63	2561.0-62.0	8.10	0.50	11.4	0.0	61.0	2.86	DOL,ANHY,SHY,PP VGS
64	2562.0-63.0	0.73	0.44	9.9	0.0	60.0	2.80	DOL,SDY,ANHY,SHY,PP VGS
65	2563.0-64.0	2.80	0.77	12.7	0.0	49.8	2.81	DOL,SDY,ANHY,SHY,PP VGS
66	2564.0-65.0	9.70	2.80	12.9	0.0	67.3	2.82	DOL,SDY,ANHY,PP VGS
67	2565.0-66.0	2.60	2.40	13.8	0.0	44.1	2.83	DOL,SDY,ANHY,PP VGS
68	2566.0-67.0	6.60	5.80	16.7	0.0	43.7	2.81	DOL,SDY,ANHY,SHY,PP VGS
69	2567.0-68.0	1.50	1.40	14.0	0.0	38.2	2.82	DOL,SDY,ANHY,SHY,PP VGS
70	2568.0-69.0	22	21	20.0	0.0	47.3	2.82	DOL,SDY,ANHY,PP VGS,VF
71	2569.0-70.0	*	0.07	15.7	0.0	54.8	2.81	DOL,SDY,ANHY,PP VGS,VF
72	2570.0-71.0	*	21	17.3	0.0	57.5	2.81	DOL,SDY,ANHY,PP VGS,VF
73	2571.0-72.0	6.40	2.30	10.1	0.0	38.5	2.91	ANHY,DOL,PP VGS
+ 74	2572.0-73.0	3.50	1.50	13.1	0.0	46.6	2.82	DOL,ANHY,PP VGS
+ 75	2573.0-74.0	6.20	1.60	11.3	0.0	46.1	2.79	DOL,ANHY,SDY,PP VGS
76	2574.0-75.0	17	16	15.3	0.0	52.9	2.84	DOL,ANHY,PP VGS
+ 77	2575.0-76.0	85	52	18.7	0.0	47.4	2.86	DOL,ANHY,PP VGS
78	2576.0-77.0	42	27	16.6	0.0	45.6	2.85	DOL,ANHY,PP VGS
79	2577.0-78.0	26	23	18.6	0.0	36.1	2.86	DOL,ANHY,PP VGS
80	2578.0-79.0	13	10	13.4	0.0	32.7	2.85	DOL,ANHY,PP VGS

CITIES SERVICE COMPANY
GANO NO. B-3 WELL

DATE: 3-16-82
FORMATION: HUGOTON

FILE NO: 3402-11194
ANALYST: EDWARDS

FULL DIAMETER ANALYSIS

SAMPLE NUMBER	DEPTH FEET	PERM MD MAXIMUM	PERM MD 90 DEG	POR %	OIL% PORE	WTR% PORE	GRAIN DEN	DESCRIPTION
81	2579.0-80.0	*	0.93	17.0	0.0	34.2	2.86	DOL, ANHY, PP VGS
# 82	2580.0-81.0	2.90	1.70	14.0	0.0	86.2	2.81	DOL, ANHY, SDY, SHY, PP VGS
# 83	2581.0-82.0	150	128	16.5	0.0	60.3	2.74	SLT/STN, DOL
# 84	2582.0-83.0	490	210	19.4	0.0	52.5	2.69	SLT/STN, DOL
# 85	2583.0-84.0	64	5.20	14.1	0.0	47.9	2.75	SLT/STN, DOL
# 86	2584.0-85.0	163	113	15.3	0.0	61.2	2.69	SLT/STN, DOL
# 87	2585.0-86.0	124	121	14.1	0.0	61.7	2.73	SLT/STN, DOL
# 88	2586.0-87.0	84	53	13.3	0.0	53.2	2.64	SLT/STN, DOL, ANHY
# 89	2587.0-88.0	112	100	13.5	0.0	54.7	2.74	SLT/STN, DOL
# 90	2588.0-89.0	33	23	12.7	0.0	54.5	2.66	SLT/STN, DOL
# 91	2589.0-90.0	*	44	17.8	0.0	51.9	2.67	SLT/STN, DOL
# 92	2590.0-91.0	82	16	12.1	0.0	65.2	2.68	SLT/STN, DOL
# 93	2591.0-92.0	253	202	13.7	0.0	65.5	2.70	SLT/STN, DOL
# 94	2592.0-93.0	23	5.10	12.3	0.0	69.0	2.71	SLT/STN, DOL
# 95	2593.0-94.0	141	72	16.1	0.0	68.9	2.71	SLT/STN, DOL
# 96	2594.0-95.0	9.60	5.30	11.2	0.0	62.3	2.73	SLT/STN, SL/SDY, DOL
# 97	2595.0-96.0	57	26	11.2	0.0	61.3	2.71	SD, SLTY, DOL
# 98	2596.0-97.0	190	89	14.4	0.0	78.5	2.72	SLT/STN, SDY, DOL
99	2597.0-98.0	243	56	14.7	0.0	75.8	2.74	SD, SLTY, DOL
100	2598.0-99.0	341	227	11.7	0.0	71.4	2.69	SD, SLTY, DOL
101	2599.0- 0.0	383	213	12.6	0.0	72.5	2.74	SD, SLTY, DOL, ANHY
# 102	2600.0- 1.0	108	85	13.7	0.0	88.0	2.76	SD, SLTY, DOL, ANHY
# 103	2601.0- 2.0	44	30	13.5	0.0	91.6	2.76	SLT/STN, SDY, DOL, ANHY
# 104	2602.0- 3.0	40	39	13.8	0.0	86.0	2.76	SLT/STN, SDY, DOL, ANHY
105	2603.0- 4.0	26	16	14.4	0.0	86.2	2.76	SD, SLTY, DOL
106	2604.0- 5.0	0.84	0.56	14.1	0.0	89.9	2.76	SD, SLTY, DOL
107	2605.0- 6.0	*	1.10	16.3	0.0	80.1	2.79	SD, SLTY, DOL

2606.0-2610.0 LOST CORE

CITIES SERVICE COMPANY
GANO NO. B-3 WELL

DATE: 3-16-82
FORMATION: HUGOTON

FILE NO: 3402-11194
ANALYST: EDWARDS

FULL DIAMETER ANALYSIS

SAMPLE NUMBER	DEPTH FEET	PERM MD MAXIMUM	PERM MD 90 DEG	POR %	OIL% PORE	WTR% PORE	GRAIN DEN	DESCRIPTION
108	2610.0-11.0	*	0.02	7.4	0.0	80.3	2.78	LM,SL/DOL
109	2611.0-12.0	0.40	0.39	15.1	0.0	84.0	2.84	DOL,PP VGS,SHY
+ 110	2612.0-13.0	46	4.30	4.6	0.0	84.8	2.74	LM,PP VGS,SL/DOL
111	2613.0-14.0	0.03	0.02	5.4	0.0	80.4	2.74	LM,PP VGS,SL/DOL
112	2614.0-15.0	0.10	0.04	9.1	0.0	75.2	2.76	LM,PP VGS,SL/DOL
+ 113	2615.0-16.0	1.00	0.36	11.6	0.0	45.3	2.74	LM,PP VGS,SL/DOL
114	2616.0-17.0	0.48	0.35	12.3	0.0	39.4	2.73	LM,VGY,SL/DOL
115	2617.0-18.0	0.68	0.60	13.2	0.0	40.1	2.73	LM,VGY,SL/DOL
116	2618.0-19.0	3.00	0.91	11.6	0.0	44.7	2.75	LM,VGY,SL/DOL
117	2619.0-20.0	0.59	0.55	12.5	0.0	40.2	2.73	LM,VGY,SL/DOL
118	2620.0-21.0	1.20	0.07	11.5	0.0	42.3	2.73	LM,PP VGS,SL/DOL,STY
119	2621.0-22.0	0.47	0.42	12.7	0.0	41.3	2.73	LM,PP VGS,SL/DOL
120	2622.0-23.0	0.49	0.17	11.2	0.0	38.8	2.73	LM,PP VGS,SL/DOL
+ 121	2623.0-24.0	1.10	0.55	8.7	0.0	50.6	2.73	LM,PP VGS,SL/DOL
122	2624.0-25.0	13	0.96	10.7	0.0	33.8	2.74	LM,PP VGS,SL/DOL,STY
123	2625.0-26.0	0.26	0.18	7.1	0.0	58.6	2.73	LM,PP VGS,SL/DOL
124	2626.0-27.0	0.42	0.18	8.1	0.0	56.6	2.72	LM,PP VGS,SL/DOL
125	2627.0-28.0	0.11	0.08	9.6	0.0	67.3	2.75	LM,PP VGS,SL/DOL
+ 126	2628.0-29.0	10	0.61	11.1	0.0	67.5	2.74	SD,SLTY,SL/LMY
+ 127	2629.0-30.0	12	3.00	8.7	0.0	70.5	2.73	SD,SLTY,SL/LMY,SHY
+ 128	2630.0-31.0	1.20	1.10	13.8	0.0	84.5	2.72	SD,SLTY,SL/LMY
129	2631.0-32.0	0.19	0.16	10.3	0.0	76.2	2.67	SD,SLTY,SL/LMY
# 130	2632.0-33.0	0.03	0.01	16.1	0.0	92.5	2.69	SD,SLTY,SL/LMY
# 131	2633.0-34.0	144	17	15.2	0.0	69.5	2.67	SLT/STN,SHY,ANHY
# 132	2634.0-35.0	154	138	10.9	0.0	72.2	2.66	SLT/STN,SHY,ANHY
# 133	2635.0-36.0	11	7.30	14.3	0.0	79.2	2.71	SLT/STN,SHY,SL/DOL
# 134	2636.0-37.0	111	111	13.1	0.0	73.8	2.70	SLT/STN,SHY,SL/DOL
# 135	2637.0-38.0	170	1.80	12.5	0.0	75.3	2.67	SLT/STN,SHY
# 136	2638.0-39.0	*	0.21	15.6	0.0	73.1	2.65	SLT/STN,SHY
# 137	2639.0-40.0	111	99	14.4	0.0	75.6	2.73	SLT/STN,SHY,ANHY

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CITIES SERVICE COMPANY
GANO NO. B-3 WELL

DATE: 3-16-82
FORMATION: HUGOTON

FILE NO: 3402-11194
ANALYST: EDWARDS

FULL DIAMETER ANALYSIS

SAMPLE NUMBER	DEPTH FEET	PERM MD MAXIMUM	PERM MD 90 DEG	POR %	OILZ PORE	WTRZ PORE	GRAIN DEN	DESCRIPTION
+ 138	2640.0-41.0	209	37	13.3	0.0	75.2	2.70	SD,SLTY,SL/DOL
+ 139	2641.0-42.0	140	26	14.4	0.0	76.3	2.71	SD,SLTY,SL/DOL
# 140	2642.0-43.0	82	47	15.0	0.0	71.3	2.72	SLT/STN,SHY,SL/DOL
141	2643.0-44.0	0.10	0.06	13.0	0.0	56.4	2.68	SD,SLTY,SL/DOL
+ 142	2644.0-45.0	5.00	0.85	12.5	0.0	71.5	2.65	SD,SLTY,SL/DOL
# 143	2645.0-46.0	38	14	14.5	0.0	74.0	2.72	SLT/STN,SHY,SL/DOL
# 144	2646.0-47.0	233	182	14.8	0.0	74.9	2.70	SLT/STN,SHY,SL/DOL
# 145	2647.0-48.0	58	67	15.5	0.0	79.6	2.74	SLT/STN,SHY,SL/DOL
# 146	2648.0-49.0	259	60	11.5	0.0	70.8	2.68	SLT/STN,SHY,SL/DOL
+ 147	2649.0-50.0	131	9.80	11.1	0.0	84.4	2.71	SD,SLTY,SL/DOL
+ 148	2650.0-51.0	5.10	0.73	12.5	0.0	85.5	2.72	SD,SLTY,SL/DOL
149	2651.0-52.0	0.04	0.03	11.3	0.0	72.8	2.65	SD,SLTY,SL/DOL
+ 150	2652.0-53.0	97	0.57	16.8	0.0	64.6	2.72	SD,SLTY,SL/DOL
+ 151	2653.0-54.0	1.20	1.20	18.7	0.0	56.0	2.70	SD,SLTY,SL/DOL
+ 152	2654.0-55.0	12	4.50	20.8	0.0	55.4	2.72	SD,SLTY,SL/DOL
+ 153	2655.0-56.0	4.30	1.50	19.7	0.0	55.0	2.73	SD,SLTY,SL/DOL
+ 154	2656.0-57.0	0.10	0.09	14.2	0.0	45.0	2.66	SD,SLTY,SL/DOL
+ 155	2657.0-58.0	5.70	0.75	14.4	0.0	68.2	2.71	SD,SLTY,SL/DOL
+ 156	2658.0-59.0	2.20	2.20	7.4	0.0	65.8	2.64	SD,SLTY,SL/DOL
157	2659.0-60.0	0.54	0.54	12.2	0.0	42.9	2.71	LM,PP VGS
158	2660.0-61.0	2.70	2.50	15.7	0.0	46.5	2.73	LM,PP VGS
159	2661.0-62.0	0.93	0.81	14.4	0.0	47.7	2.74	LM,PP VGS
160	2662.0-63.0	51	50	28.4	0.0	49.1	2.79	SD,SL/DOL,ANHY
161	2663.0-64.0	68	66	27.7	0.0	51.3	2.79	SD,SL/DOL,ANHY
162	2664.0-65.0	39	37	21.0	0.0	54.3	2.78	SD,SL/DOL,ANHY
163	2665.0-66.0	46	44	23.2	0.0	52.8	2.78	SD,SL/DOL,ANHY
164	2666.0-67.0	58	48	28.7	0.0	56.1	2.79	SD,SL/DOL,ANHY
165	2667.0-68.0	4.70	4.20	21.1	0.0	48.3	2.85	DOL,PP VGS,SL/ANHY
166	2668.0-69.0	22	20	29.2	0.0	49.6	2.85	DOL,PP VGS,SL/ANHY
167	2669.0-70.0	55	49	33.3	0.0	48.5	2.84	DOL,PP VGS,SL/ANHY

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CITIES SERVICE COMPANY
GANO NO. B-3 WELL

DATE: 3-16-82
FORMATION: HUGOTON

FILE NO: 3402-11194
ANALYST: EDWARDS

FULL DIAMETER ANALYSIS

SAMPLE NUMBER	DEPTH FEET	PERM MD MAXIMUM	PERM MD 90 DEG	POR %	OIL% PORE	WTR% PORE	GRAIN DEN	DESCRIPTION
168	2670.0-71.0	17	13	26.5	0.0	92.9	2.86	DOL, PP VGS, ANHY
169	2671.0-72.0	9.40	8.80	36.6	0.0	74.3	2.84	DOL, PP VGS, ANHY
170	2672.0-73.0	2.50	2.40	23.5	0.0	69.8	2.83	DOL, PP VGS, ANHY
+ 171	2673.0-74.0	34	9.70	19.8	0.0	79.0	2.82	SLT/STN, DOL, ANHY
172	2674.0-75.0	3.80	3.00	21.5	0.0	70.1	2.83	SLT/STN, DOL, ANHY
173	2675.0-76.0	4.70	2.20	7.8	0.0	84.8	2.73	LM, PP VGS, ANHY
174	2676.0-77.0	0.05	0.04	8.7	0.0	87.5	2.72	LM, PP VGS, SL/ANHY
175	2677.0-78.0	0.03	0.02	5.9	0.0	82.3	2.73	LM, PP VGS, SL/ANHY
176	2678.0-79.0	1.80	1.10	18.9	0.0	37.7	2.75	LM, VGY, SL/ANHY
177	2679.0-80.0	2.80	2.30	14.2	0.0	68.3	2.72	LM, VGY, SL/ANHY
178	2680.0-81.0	0.80	0.74	11.5	0.0	66.9	2.75	LM, VGY, SL/ANHY
179	2681.0-82.0	0.41	0.38	12.8	0.0	62.0	2.75	LM, PP VGS, SL/ANHY
180	2682.0-83.0	0.34	0.34	12.5	0.0	57.7	2.79	LM, PP VGS, ANHY, SHY
181	2683.0-84.0	0.85	0.85	15.4	0.0	58.2	2.75	LM, PP VGS, SL/ANHY
182	2684.0-85.0	2.40	2.30	14.3	0.0	69.1	2.72	LM, PP VGS, SL/ANHY
183	2685.0-86.0	3.20	3.20	15.8	0.0	75.9	2.73	LM, PP VGS, SL/ANHY
184	2686.0-87.0	2.60	2.30	15.9	0.0	70.4	2.75	LM, PP VGS, SL/ANHY
185	2687.0-88.0	2.10	2.10	16.0	0.0	70.1	2.76	LM, PP VGS, SL/ANHY
186	2688.0-89.0	1.40	1.40	16.0	0.0	60.6	2.75	LM, PP VGS, SL/ANHY
187	2689.0-90.0	0.84	0.78	14.1	0.0	58.3	2.74	LM, PP VGS, SL/ANHY
188	2690.0-91.0	2.40	2.30	18.3	0.0	65.4	2.78	LM, PP VGS, ANHY
189	2691.0-92.0	2.30	2.10	18.2	0.0	69.8	2.78	LM, PP VGS, ANHY
190	2692.0-93.0	1.90	1.80	16.8	0.0	71.3	2.78	LM, PP VGS, ANHY
191	2693.0-94.0	4.10	3.20	18.3	0.0	63.6	2.83	LM, PP VGS, ANHY
192	2694.0-95.0	1.30	1.30	18.6	0.0	65.4	2.75	SD, SLTY, SL/DOL
193	2695.0-96.0	4.50	4.40	21.3	0.0	72.3	2.74	SD, SLTY, SL/DOL
194	2696.0-97.0	4.10	4.10	22.4	0.0	66.7	2.78	SD, SLTY, SL/DOL, ANHY
195	2697.0-98.0	3.90	3.00	19.7	0.0	62.9	2.75	SD, SLTY, SL/DOL
196	2698.0-99.0	2.30	2.30	21.7	0.0	60.4	2.78	SD, SLTY, SL/DOL, ANHY
197	2699.0- 0.0	0.32	0.29	12.8	0.0	82.3	2.76	SD, SLTY, SL/DOL

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CITIES SERVICE COMPANY
GANO NO. 8-3 WELL

DATE: 3-16-82
FORMATION: HUGOTON

FILE NO: 3402-11194
ANALYST: EDWARDS

FULL DIAMETER ANALYSIS

SAMPLE NUMBER	DEPTH FEET	PERM MD MAXIMUM	PERM MD 90 DEG	POR %	OIL% PORE	WTR% PORE	GRAIN DEN	DESCRIPTION
+ 198	2700.0- 1.0	31	28	20.8	0.0	77.3	2.69	SD,SLTY,SL/DOL
+ 199	2701.0- 2.0	8.10	6.40	15.0	0.0	90.9	2.70	SD,SLTY,SL/DOL
200	2702.0- 3.0	0.05	0.05	10.2	0.0	96.6	2.65	SD,SLTY
	2703.0- 4.0							SH
201	2704.0- 5.0	0.81	0.39	12.2	0.0	84.4	2.75	SD,SLTY,SL/DOL
202	2705.0- 6.0	0.05	0.03	10.0	0.0	87.9	2.72	SLT/STN,SL/DOL
	2706.0- 7.0							SH
# 203	2707.0- 8.0	14	9.30	12.9	0.0	91.3	2.77	SLT/STN,SL/DOL,SL/ANHY
204	2708.0- 9.0	0.27	0.17	11.8	0.0	81.1	2.72	SLT/STN,SL/DOL,SL/ANHY
205	2709.0-10.0	0.22	0.11	8.6	0.0	86.1	2.66	SD,SLTY,SL/DOL
206	2710.0-11.0	0.14	0.09	9.8	0.0	96.1	2.64	SD,SLTY
207	2711.0-12.0	*	3.10	16.9	0.0	72.5	2.70	SD,SLTY,SL/DOL
+ 208	2712.0-13.0	16	4.20	15.9	0.0	73.8	2.70	SD,SLTY,SL/DOL
209	2713.0-14.0	1.70	1.10	15.7	0.0	83.2	2.68	SD,SLTY,SL/DOL
210	2714.0-15.0	3.20	2.80	15.5	0.0	70.0	2.74	LM,FOSS,PP VGS
211	2715.0-16.0	11	11	16.9	0.0	73.1	2.71	LM,FOSS,PP VGS
212	2716.0-17.0	19	19	17.8	0.0	67.1	2.71	LM,FOSS,PP VGS
213	2717.0-18.0	30	27	16.9	0.0	63.7	2.71	LM,FOSS,PP VGS
214	2718.0-19.0	36	35	28.0	0.0	58.6	2.73	LM,FOSS,PP VGS
215	2719.0-20.0	33	31	25.4	0.0	66.1	2.74	LM,PP VGS,SL/DOL
216	2720.0-21.0	7.40	7.30	22.1	0.0	63.4	2.74	LM,PP VGS,SL/DOL
217	2721.0-22.0	2.00	2.00	17.8	0.0	57.4	2.73	LM,PP VGS,SL/DOL
218	2722.0-23.0	1.30	1.30	9.7	0.0	93.8	2.74	LM,PP VGS,SL/DOL
219	2723.0-24.0	0.78	0.67	15.6	0.0	49.6	2.74	LM,PP VGS,SL/DOL
220	2724.0-25.0	1.20	0.70	16.2	0.0	48.0	2.75	LM,PP VGS,SL/DOL
221	2725.0-26.0	1.70	1.10	16.8	0.0	48.2	2.75	LM,PP VGS,SL/DOL
222	2726.0-27.0	*	1.20	16.1	0.0	60.7	2.77	LM,PP VGS,DOL,VF
223	2727.0-28.0	2.70	2.70	17.2	0.0	58.4	2.73	LM,PP VGS,SL/DOL
224	2728.0-29.0	*	3.10	17.4	0.0	63.1	2.74	LM,PP VGS,SL/DOL
225	2729.0-30.0	2.60	2.40	18.0	0.0	56.2	2.72	LM,PP VGS,SL/DOL

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