

Log Analysis

n = 1.8
m = 1.8

Rw = .04

Porosity = N-D

COMPANY

Cities Service Oil Co.

WELL

Alexander "D" #2

TOWN

Panama

COUNTY

Grant

STATE

KANSAS

DEPTH PLOT 1	Prox DX	R _T	R _{no} R _T	S _w STEP	AT N	SP N	S _D	S _{ma} a	AT _{ma} a	Φ SONIC	% POROSITY N-D	% WATER	REMARKS
2741	2.5	12	.21	14	78	19	2.24	2.59	49.9	20.2	25.2	17	frac Ugalan Lmy-Dolo-Gc
2751	10	17	.59	28	63	13	2.45	2.68	46.8	11.4	14.8	23	same
2778	14	13	1.08	40	67	9	2.45	2.69	51.5	11.3	13	31	"
2781	9	11	.82	33	68	10	2.41	2.62	51.3	12.1	15	29	"
2784	8.5	10	.85	35	71	10.8	2.34	2.57	52.2	13.7	18	26	"
2787	8	11	.73	31	69	11	2.37	2.6	51	13	17	26	"
2789	8.7	13	.67	29	70	11.2	2.37	2.603	51.4	13.5	17.1	24	"
2793	7.8	6.5	1.2	43	67	16	2.47	2.72	46.7	14.3	15.4	38	Transition zone
2797	5.6	3	3.2	80	64	15	2.57	2.77	46.6	12.2	12	76	Lmy Dolo Posstr
2801	13	5.2	3.3	82	61	14	2.59	2.77	45.8	10.6	11	61	Same
2805	6	3.9	2	60	70	18.4	2.5	2.76	46.8	16.3	15.9	49	Same
2809	5	2.8	2.8	72	72	18.8	2.51	2.77	47.1	17.5	15.8	60	Same
2814	9.9	4	3.1	78	69	16.3	2.52	2.75	47.2	15.4	14.2	55	Same
2831	13	8	3.8	90	62	11.7	2.54	2.72	47	10.6	11.1	47	Same
2841	5	1.6	3	76	73	14.1	2.52	2.73	50.9	16	13.1	98	Same
2863	2.4	2.3	1.04	39	79	24	2.49	2.82	46.9	22.6	19.1	55	Shaley
2865	12	5	2.8	72	63	11.2	2.55	2.72	47.5	11	10.6	65	
2868	14	7	2.3	65	62	9.3	2.54	2.7	48.6	9.5	10	57	
2871	17	9	2	60	62	8	2.6	2.72	49.4	9	7.4	67	
2874	10	6	2.3	65	62	10.4	2.56	2.72	47.4	10.3	10	62	
2877	8.3	4.1	2.6	69	67	13	2.48	2.7	48.2	13.3	13.8	55	
2881	15	7.5	3.1	78	63	10	2.53	2.7	48.1	10.6	10.7	51	
2883	16	8	3.3	82	63	11.5	2.57	2.74	47.3	11.1	10.1	52	

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LOCATION

ENGINEER

Log Analysis

COMPANY Cities Service Oil Company		WELL Alexander "D" #2	
FIELD Panoma	COUNTY Grant	STATE Kansas	

DEPTH Plot #1	Prox D _i	R _T	R _{XO} R _T	Sw STEP	Δε	Φ _N	S _b	S _{ma} a	ΔT _{ma} a	Φ _{SONIC}	% POROSITY N-D	% WATER	REMARKS
2886	7	5.1	1.37	48	70	16	2.59	2.79	47.5	15.9	11.9	57	
2888	4.1	4.3	.95	37	75	19	2.57	2.81	48	19.1	17	44	
2891	3.6	3.5	1.03	38	82	20	2.5	2.78	51.4	22.2	16.6	50	
2895	4.5	3.8	1.18	42	69	13	2.6	2.77	49.5	14	10.2	78	
2898	2.8	3	.93	37	77	18.5	2.55	2.79	49.7	19.6	14.4	63	
2900	4	3.7	1.08	40	68	16.6	2.59	2.8	46.8	14.9	12.3	66	
2908	20	3.9	4.3	100	60	13	2.65	2.8	46	9.8	8.8	89	
2911	4	1.8	3	76	69	20	2.51	2.79	45.6	16.3	16.3	74	
2913	6.3	3.6	1.75	57	73	13	2.6	2.81	48.5	17.4	12.1	68	
2915	17	6	4.3	100	60	13	2.57	2.75	46	9.8	11	56	
2917	5	5	1	38	73	18	2.59	2.81	47.6	18	13	53	
2919	14	5.5	4.3	100	61	12	2.56	2.74	46.8	10	10.8	60	
2922	21	7	3.4	84	58	11	2.55	2.72	46.3	8.2	10.5	54	
2924	19	6.1	3.3	82	60	12.4	2.54	2.73	46.3	9.6	11.4	54	
2926	8.4	3	3	76	66	15.3	2.48	2.72	46.9	13.4	14.8	61	
2928	8.6	3.1	3.1	78	64	13.7	2.53	2.73	46.8	12.1	12.5	71	
2930	18	4	4.1	96	62	13	2.55	2.74	46.6	10.8	11.5	67	
2932	7.7	5	1.54	50	69	17	2.62	2.82	47	15.5	11.6	59	
2934	5.2	5.4	.96	37	71	16	2.55	2.76	48.2	16.2	13.1	50	
2936	24	10	2.4	66	52	10	2.6	2.74	44.7	5.1	8.6	54	
2940	6.9	5	1.38	48	67	16	2.58	2.78	46.7	14.3	12.2	56	
2943	5.6	5.3	1.06	40	72	16.5	2.56	2.78	48.4	16.8	13.1	51	
2946	5.8	5	1.16	41	70	13.6	2.57	2.75	49.6	14.6	11.3	61	

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LOCATION

ENGINEER

Log Analysis

6-11-10

COMPANY Cities Service Oil Company							WELL Alexander "D" #2						
FIELD Panama				COUNTY Grant				STATE Kansas					

DEPTH	P _{ROK} D _i	R _T	R _{XO} R _T	S _w STEP	Δ _ε	Φ _N	ρ _b	ρ _{ma} a	ΔT _{ma} a	Φ _{SONIC}	% POROSITY N-D	% WATER	REMARKS
3047	4.7	4	1.18	41	72	20	2.55	2.81	46.8	17.7	15.2	51	
3050	3.5	4.1	.85	35	75	21	2.57	2.83	47	19.7	15.1	51	
3065	35	20	1.75	57	55	7	2.57	2.7	46.9	5.7	6.9	46	
3067	8.5	9	.94	37	65	8	2.56	2.7	51.2	10	8.6	57	
3069	30	18	1.67	55	55	9	2.6	2.73	46.3	6.1	8	42	
3071	6	4.2	1.43	49	63	13	2.57	2.75	46.8	11.4	11	69	
3074	9	7	1.29	47	63	10	2.61	2.75	48.1	10.6	8.3	68	
3076	9	8	1.13	40	65	10	2.64	2.76	49.7	11	7.4	71	
3079	10	8	1.25	46	63	10.5	2.59	2.74	47.9	10.7	9.1	58	
3082	5	7.7	.65	30	64	11	2.56	2.73	48	11.3	10.2	53	
3084	9	7.9	1.13	40	64	10.8	2.6	2.75	48.1	11.4	9	59	
3087	9.5	8	1.19	41	64	10	2.63	2.75	49	10.7	7.8	68	
3090	6	6	1	38	70	14	2.52	2.73	49.3	14.8	13	48	
3092	3.6	5.8	.62	29	66	10.7	2.53	2.71	49.8	11.6	11	57	
3094	3.7	5.6	.66	30	70	11	2.54	2.72	49.6	13.4	10.8	59	
3096	3.8	5	.76	33	72	11	2.5	2.69	53	14	12.1	57	
3098	4.2	4.7	.89	35	73	16.8	2.49	2.74	48.4	17.5	15.2	47	
3100	5.3	4.5	1.18	41	75	19	2.51	2.77	48	19.1	15.9	46	
3111	7.5	1.8	4.3	100	63	18.4	2.47	2.74	49.6	12.7	16.7	72	
3112	7	1.7	4.2	98	63	19	2.5	2.77	49.2	13	16.1	77	
3114	5	2	2.5	67	69	18	2.48	2.75	46.6	15.7	16.2	70	
3118	18	12	1.5	50	56	7	2.63	2.73	47.2	6.2	6.1	69	
3120	8	5.4	1.48	49	67	16	2.6	2.8	46.7	14.3	11.6	56	

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LOCATION	ENGINEER
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Log Analysis

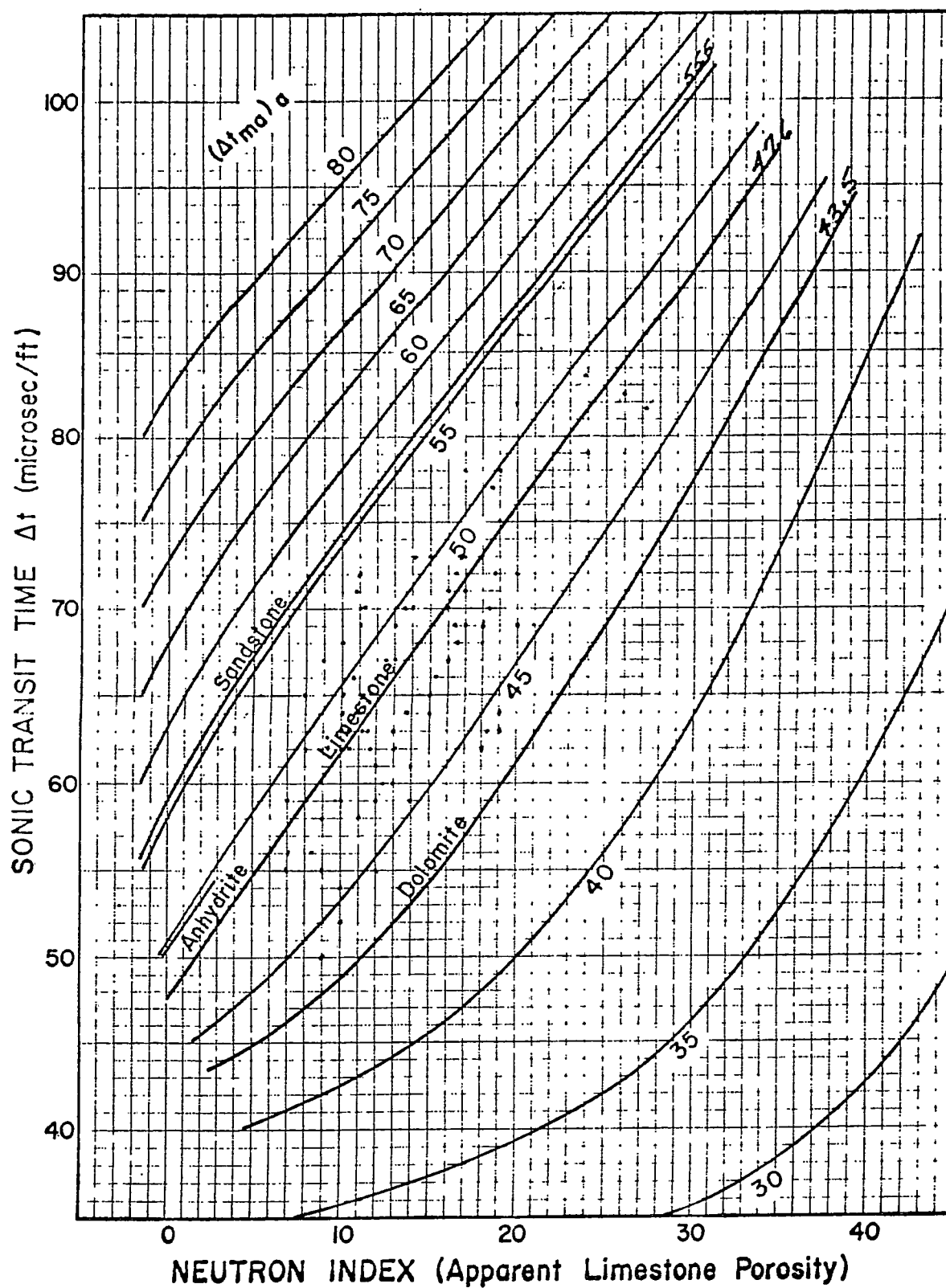
COMPANY **Cities Service Oil Company** WELL **Alexander "D" #2**
 FIELD **Panoma** COUNTY **Grant** STATE **Kansas**

DEPTH	P _{YOK} E	R _T	R _{LOG} R _T	SW STEP	Δ _T	Φ _N	ρ _b	ρ _{ma} a	Δ _T ma	Φ _{SONIC}	% POROSITY	% WATER	REMARKS
2948	4	4	1	38	66	12.5	2.59	2.76	47.9	12.8	10.2	76	
2950	3.3	3.3	1	38	68	12	2.55	2.79	46.9	15.1	14.2	61	
2957	30	19	1.58	50	56	8.3	2.62	2.74	46.8	6.5	7	47	
2959	55	14	3.9	90	54	10	2.63	2.75	45.2	6.1	7.8	49	
2961	8	7	1.14	41	62	10	2.69	2.76	47.6	10.2	7.4	77	
2963	50	20	2.5	67	55	7	2.66	2.75	47	5.6	5.3	60	
2966	5.7	4	1.43	49	78	17	2.59	2.77	51.5	19.3	14	55	
2979	15	6.7	3.8	80	59	10	2.59	2.71	47.1	8.4	10.3	56	
2981	20	6.1	3.8	90	58	9	2.55	2.71	47.2	7.6	9.5	64	
2983	17	7.8	3.8	90	59	7	2.56	2.69	48.7	7.3	8.2	65	
2996	5.8	4.5	1.29	47	67	12.6	2.55	2.74	48.6	13.1	11.3	64	
3001	40	10	4	95	59	9.7	2.62	2.75	47.2	8.3	7.9	59	
3005	4.5	4.5	1	38	73	15	2.59	2.75	50.1	16.5	12.9	56	
3008	4	3.3	1.18	41	69	13	2.55	2.74	49.5	14	11.5	75	
3011	2.9	2.8	1.04	39	71	17	2.48	2.74	47.4	16.7	15.7	60	
3015	16	8	2	60	55	12	2.53	2.72	44.8	7.1	11.5	46	
3022	9	4	3.1	78	62	18	2.5	2.76	44.5	12	15.7	49	
3024	6.8	1.7	4.3	100	64	19	2.45	2.76	44.7	13.3	17.6	71	
3025	5.5	1.5	3	76	69	20	2.4	2.72	45.6	16.3	19.6	68	
3027	15	1.8	4.3	100	65	15	2.47	2.71	46.7	12.9	15	80	
3029	13	3.4	4.1	96	59	12	2.55	2.73	46	9.1	11	77	
3031	9	3	3.1	78	61	14	2.53	2.74	45.8	10.6	12.6	72	
3033	10	4	3.1	78	59	14	2.59	2.75	45.3	9.5	12.3	63	

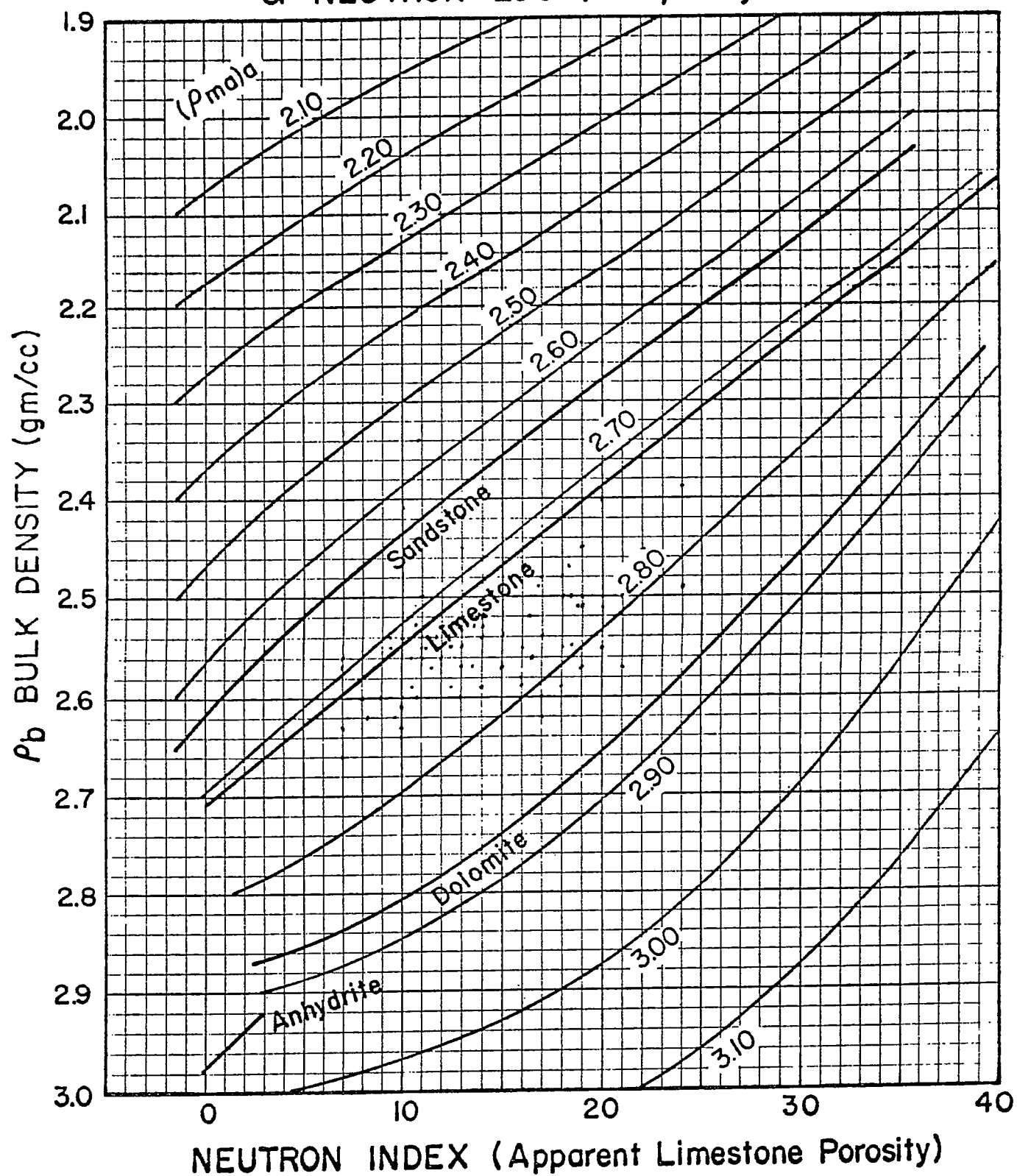
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LOCATION _____ ENGINEER _____

MID Chart 2

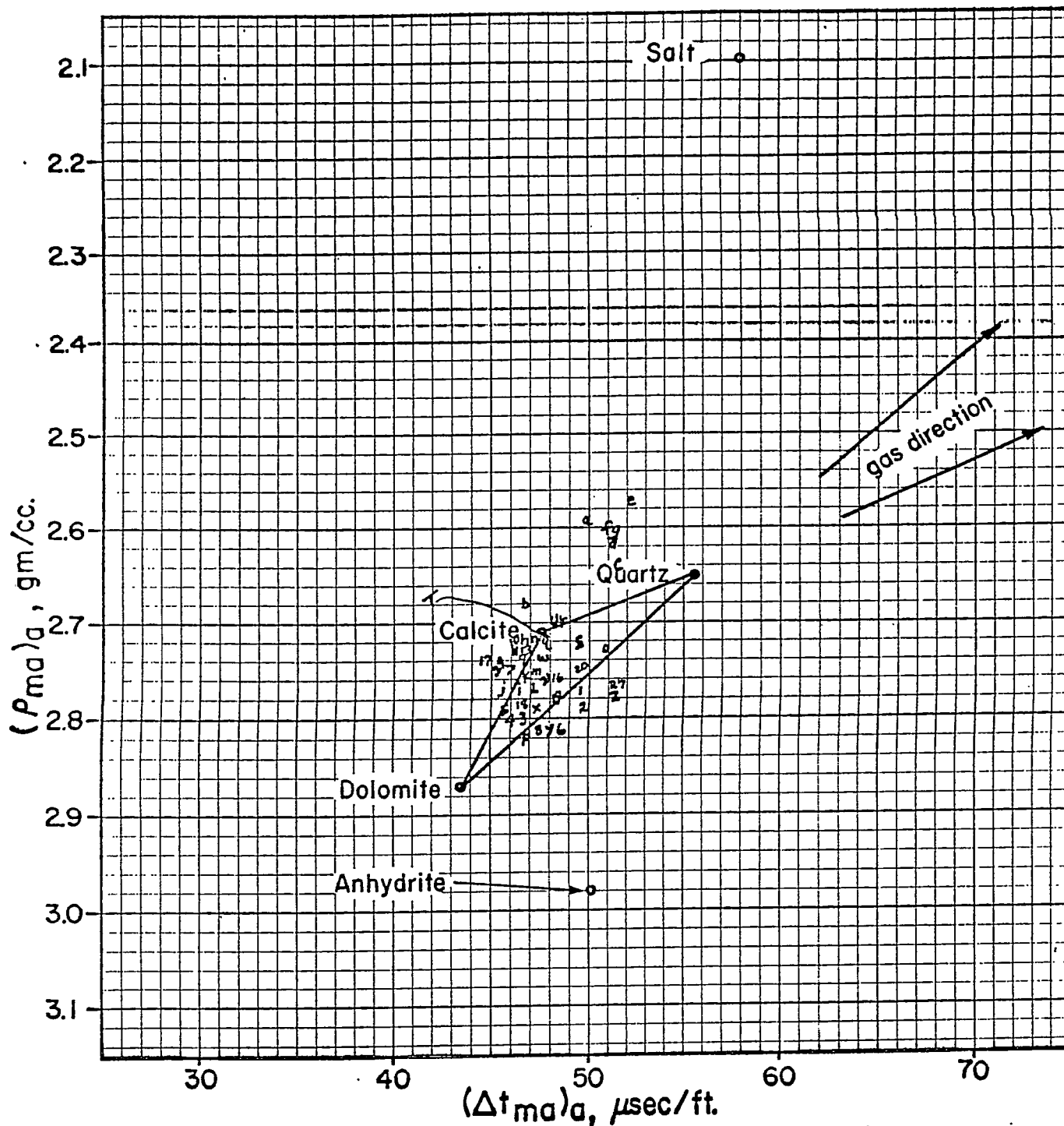
DETERMINATION OF $(\Delta t_{ma})_a$ FROM SONIC LOG
& NEUTRON LOG (CNL)

MID Chart 6

DETERMINATION OF $(\rho_{ma})_a$, FROM FDC
& NEUTRON LOG (CNL, Salty Mud)

MID Chart 7

THE MATRIX IDENTIFICATION (MID) PLOT



PLOT # 1

Csoe - Alexander
"D" #2

u & v are same
 h & 12 " "
 q & 14 " "
 p & 15 " "
 13 & 22 " "
 21 & 25 " "
 m & 26 " "

CITIES SERVICE
INTEROFFICE LETTER

April 15, 1975

TO: Dr. John P. Hobson, Tulsa

FROM: J. P. Barnhart, Oklahoma City

SUBJECT: Thin Section Analysis
Cities Service Oil Co.
Alexander "D" No. 2
C NE/4 of Section 29-27S-35W
Grant Co., Kansas

My plans to come to Tulsa to study these thin sections were cut short as I have some well site duty to perform.

I am enclosing $\pm$ 40 thin sections impregnated with blue plastic and stained, along with a rough draft of my stratigraphic column, log analysis, core analysis. I will attempt to come to Tulsa within the latter part of next week (24th-25th) or the first portion of the following week (28th-30th).

If your schedule permits, I hope you will have some time to review some of these thin sections, so it will take us only a day or so to generally catalogue them.

JPB/jh