New Mexico Bureau of Mines and Mineral Resources
Open File Report No. OF-278

ORGANIC GEOCHEMICAL ANALYSIS, GARDNER NO. 1 KIDWELL WELL, TORRANCE COUNTY, NEW MEXICO

by GeoChem Laboratories, Inc.

1987

GeoChem Laboratories, Inc.

GEOCHEMICAL ANALYSES
SOURCE ROCK EVALUATION

CRUDE OIL—SOURCE ROCK CORRELATION

CRUDE OIL CHARACTERIZATION
GEOCHEMICAL PROSPECTING

1143-C BRITTMOORE ROAD • HOUSTON, TEXAS 77043-5094 • 713/467-7011

July 18, 1984

Mr. Jeremy Setter
TRANS PECOS RESOURCES, INC.
One Memorial City Plaza
Suite 790
800 Gessner
Houston, Texas 77024

RE: GeoChem Job No. 2877
Gardner #1 Kidwell

Dear Mr. Setter:

Enclosed are the results of the total organic analysis and the Rock-Eval pyrolyses performed on your 48 samples from the Gardner #1 Kidwell. Also included is the invoice for this work.

21-2N-10E
Torrance Co

Please call if we can be of additional assistance.

Sincerely,

Donald L. Davis

Donald L. Davis
Manager - Technical Services
GEOCHEM LABORATORIES, INC.

st

Enclosures

TABLE

RESULTS OF ROCK-EVAL PYROLYSIS

GeoChem Sample No.	Depth Interval (Feet)	Tmax (c)	S_1 (mg/g)	S_2 (mg/g)	S_3 (mg/g)	PI	PC*	T.O.C. (wt.%)	Hydrogen Index	Oxygen Index
2877-001	1280-1300	228*	0.04	0.04	0.18	0.50	0.00	0.14	28	128
2877-002	1300-1400	270*	0.06	0.03	0.22	0.75	0.00	0.14	21	157
2877-003	1400-1500	259*	0.05	0.07	0.32	0.42	0.01	0.17	41	188
2877-004	1500-1600	224*	0.04	0.05	0.25	0.50	0.00	0.16	31	156
2877-005	1600-1700	224*	0.08	0.07	0.25	0.57	0.01	0.12	58	208
2877-006	1700-1800	221*	0.04	0.06	0.29	0.40	0.00	0.12	50	241
2877-007	1800-1900	222*	0.04	0.05	0.46	0.50	0.00	0.12	41	383
2877-008	1900-2000	270*	0.09	0.17	0.55	0.35	0.02	0.17	100	323
2877-009	2000-2100	300*	0.07	0.16	0.35	0.32	0.01	0.17	94	205
2877-010	2100-2200	325*	0.03	0.01	0.38	0.75	0.00	0.14	7	271
2877-011	2200-2300	272*	0.06	0.04	0.33	0.60	0.00	0.12	33	275
2877-012	2300-2400	271*	0.03	0.04	0.28	0.50	0.00	0.14	28	200
2877-013	2400-2500	272*	0.07	0.07	0.54	0.50	0.01	0.18	38	300
2877-014	2500-2600	291*	0.04	0.13	0.28	0.25	0.01	0.40	32	70
2877-015	2600-2700	363	0.06	0.32	0.29	0.16	0.03	0.33	96	87
2877-016	2700-2800	272*	0.06	0.04	0.46	0.60	0.00	0.37	10	124
2877-017	2800-2900	281*	0.04	0.02	0.61	0.67	0.00	0.21	9	290
2877-018	2900-3000	275*	0.05	0.06	0.31	0.50	0.00	0.20	30	155
2877-019	3000-3100	270*	0.05	0.06	0.31	0.50	0.00	0.26	23	119
2877-020	3100-3200	243*	0.05	0.03	0.28	0.62	0.00	0.19	15	147
2877-021	3200-3300	230*	0.02	0.02	0.39	0.50	0.00	0.41	4	95
2877-022	3300-3400	225*	0.02	0.01	0.31	1.00	0.00	0.21	4	147
2877-023	3400-3500	357	0.05	0.32	0.31	0.14	0.03	0.39	82	79
2877-024	3500-3600	304*	0.01	0.03	0.25	0.25	0.00	0.31	9	80
2877-025	3600-3700	238*	0.02	0.01	0.25	1.00	0.00	0.47	2	53
2877-026	3700-3800	224*	0.00	0.00	0.05	0.00	0.00	0.29	0	17
2877-027	3800-3900	336*	0.04	0.03	0.31	0.67	0.00	0.37	8	83
2877-028	3900-4000	275*	0.03	0.05	0.38	0.37	0.00	0.29	19	131
2877-029	4000-4100	275*	0.04	0.08	0.30	0.33	0.01	0.35	22	85
2877-030	4100-4200	275*	0.05	0.14	0.26	0.28	0.01	0.25	56	104

T.O.C. = Total organic carbon, wt.%
S1 = Free hydrocarbons, mg HC/g of rock
S2 = Residual hydrocarbon potential (mg HC/g or rock)
S_3 = CO_2 produced from kerogen pyrolysis (mg CO_2/g of rock)
PC* = 0.083 (S1 + S2)
Hydrogen Index = mg HC/g organic carbon
Oxygen Index = mg CO_2/g organic carbon
PI = S1/S1 + S2
Tmax = Temperature Index, degrees C.

TABLE

RESULTS OF ROCK-EVAL PYROLYSIS

GeoChem Sample No.	Depth Interval (Feet)	Tmax (c)	S_1 (mg/g)	S_2 (mg/g)	S_3 (mg/g)	PI	PC*	T.O.C. (wt.%)	Hydrogen Index	Oxygen Index
2877-031	4200-4300	275*	0.07	0.07	0.25	0.50	0.01	0.30	23	83
2877-032	4300-4400	246*	0.04	0.06	0.36	0.40	0.00	0.41	14	87
2877-033	4400-4500	317*	0.07	0.08	0.31	0.50	0.01	0.35	22	88
2877-034	4500-4600	271*	0.06	0.08	0.34	0.43	0.01	0.31	25	109
2877-035	4600-4700	273*	0.06	0.09	0.39	0.43	0.01	0.29	31	134
2877-036	4700-4800	339	0.13	0.48	0.52	0.22	0.05	0.29	208	226
2877-037	4800-4900	361*	0.06	0.14	0.54	0.30	0.01	0.54	25	100
2877-038	4900-5000	331	0.11	0.21	0.43	0.34	0.02	0.67	31	64
2877-039	5000-5100	332*	0.06	0.10	0.44	0.37	0.01	0.27	37	162
2877-040	5100-5200	273*	0.03	0.04	0.41	0.50	0.00	0.31	12	132
2877-041	5200-5300	274*	0.02	0.05	0.47	0.33	0.00	0.31	16	151
2877-042	5300-5400	296*	0.01	0.06	0.42	0.17	0.00	0.44	13	95
2877-043	5400-5500	345	0.09	0.23	0.58	0.28	0.02	0.50	46	116
2877-044	5500-5600	264*	0.08	0.05	0.53	0.67	0.01	0.22	22	240
2877-045	5600-5700	226*	0.03	0.02	0.31	0.75	0.00	0.39	5	79
2877-046	5700-5800	267*	0.02	0.05	0.35	0.33	0.00	0.50	10	70
2877-047	5800-5900	339*	0.09	0.11	0.46	0.45	0.01	0.36	30	127
2877-048	5900-6000	348	0.17	0.23	0.49	0.42	0.03	0.31	74	158

* The S2 value, or quantity of kerogen pyrolyzed to bitumen, is insufficient to produce a valid Tmax.

T.O.C. = Total organic carbon, wt.%
S1 = Free hydrocarbons, mg HC/g of rock
S2 = Residual hydrocarbon potential (mg HC/g or rock)
S_3 = CO2 produced from kerogen pyrolysis (mg CO2/g of rock)
PC* = 0.083 (S1 + S2)
Hydrogen Index = mg HC/g organic carbon
Oxygen Index = mg CO2/g organic carbon
PI = S1/S1 + S2
Tmax = Temperature Index, degrees C.