

New Mexico Bureau of Mines and Mineral Resources
Open File Report No. OF 198

HYDROCARBON SOURCE-ROCK EVALUATION STUDY,
SYCOR NEWTON NO. 1 STATE L-6,350 WELL,
LUNA COUNTY, NEW MEXICO

by L. Paul Tybor
GeoChem Laboratories, Inc.
Houston, Texas
May 17, 1982



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

May 17, 1982

Mr. Clayton S. Valder
Marshall R. Young Oil Co.
750 West Fifth Street
Fort Worth, Texas 76102

Dear Mr. Valder:

Enclosed please find the results of the organic geochemical analyses performed on well cutting samples from the Sycor Newton #1 State L-6,350 well, located in Sec. 10-T23S-R11W, Luna County, New Mexico.

Upon arrival at the lab, the samples were assigned the GeoChem Job Number 2289, and were submitted to the following analytical program:

| <u>Type of Analysis</u> | <u>Table</u> |
|---|--------------|
| Total organic carbon determination and brief lithological description..... | I |
| Visual kerogen assessment..... | II |

Pyrolysis analysis was not performed on samples from this well due to the organic-lean nature of the rocks penetrated by this well.

DISCUSSION OF THE RESULTS

A. Thermal Maturity

The thermal maturity of the sediments penetrated by this well ranges from an immature Maturation Index Stage 1+ at 6010+ feet, within the Lobo unit, to a moderately mature Maturation Index Stage 2 to 2+ at 7690+ feet, within Cambrian Bliss Sandstone (Table II). The rocks from 6010' to 6460', within the Lobo, are within the pre-oil generating zone, wherein only biogenic methane gas could have been generated. The moderately mature rocks from 6710', within the Montoya, to 7690', within the Bliss Sandstone, are within the oil window, where oil generation could have occurred from rocks containing sufficient quantities of organic matter.

Mr. Clayton Valder

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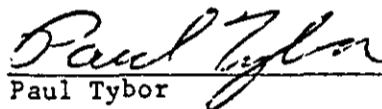
May 17, 1982

B. Hydrocarbon Source Characterization

The sediments analyzed from this well are organic-lean and have poor hydrocarbon source characteristics. The explorationist should move in a direction whereby the mature maturation levels observed in this well are maintained, and hopefully in this direction these rocks would contain rich amounts of organic matter.

Should you have any questions concerning this data or if we can be of further assistance to you, please feel free to contact us.

Yours truly,



Paul Tybor
Project Coordinator
GEOCHEM LABORATORIES, INC.

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Enclosures



Table I

SCREEN ANALYSIS SUMMARY

| GeoChem Sample Number | Well Interval (Feet) | Brief Lithological Description | Total Organic Carbon (% of Rock) |
|-----------------------------|----------------------------|--|--|
| 2289-001 | 6000-6010 | Composite: Red shale and sandstone. | 0.12 |
| 2289-002 | 6200-6210 | Composite: Red shale and sandstone. | 0.12/0.12 |
| 2289-003 | 6450-6460 | Composite: Red shale and sandstone. | 0.08 |
| 2289-004 | 6600-6610 | Dolomite, pinkish gray. | 0.06 |
| 2289-005 | 6700-6710 | Dolomite, cherty, pinkish gray. | 0.06 |
| 2289-006 | 6800-6810 | Dolomite, light brownish gray. | 0.05 |
| 2289-007 | 6900-6910 | Dolomite, light brownish gray. | 0.06/0.05 |
| 2289-008 | 7000-7010 | Dolomite, light brownish gray. | 0.06 |
| 2289-009 | 7100-7110 | Dolomite, light brownish gray. | 0.05 |
| 2289-010 | 7200-7210 | Dolomite, grading to limestone, brownish gray. | 0.05 |
| 2289-011 | 7300-7310 | Limestone, light brownish gray. | 0.05 |
| 2289-012 | 7400-7410 | Dolomite, light brownish gray. | 0.05 |
| 2289-013 | 7500-7510 | Dolomite, light brownish gray. | 0.05/0.06 |
| 2289-014 | 7600-7610 | Dolomite, light brownish gray. | 0.05 |
| 2289-015 | 7680-7690 | Composite: Dolomite and sandstone. | 0.06 |

