## **Accepted Manuscript**

Geological and geochemical characterization of lacustrine shale: A case study of the Jurassic Da'anzhai member shale in the central Sichuan Basin, southwest China

Qilu Xu, Bo Liu, Yongsheng Ma, Xinmin Song, Yongjun Wang, Zhangxin Chen

PII: \$1875-5100(17)30380-3

DOI: 10.1016/j.jngse.2017.09.008

Reference: JNGSE 2314

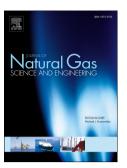
To appear in: Journal of Natural Gas Science and Engineering

Received Date: 21 June 2017

Revised Date: 15 September 2017 Accepted Date: 27 September 2017

Please cite this article as: Xu, Q., Liu, B., Ma, Y., Song, X., Wang, Y., Chen, Z., Geological and geochemical characterization of lacustrine shale: A case study of the Jurassic Da'anzhai member shale in the central Sichuan Basin, southwest China, *Journal of Natural Gas Science & Engineering* (2017), doi: 10.1016/j.ingse.2017.09.008.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



## ACCEPTED MANUSCRIPT

- 1 First: Manuscript with track changes
- 2 Geological and geochemical characterization of lacustrine shale: a case study of the Jurassic
- 3 Da'anzhai Member shale in the central Sichuan Basin, Southwest China
- 4 Qilu Xu<sup>a,b,c</sup>, Bo Liu<sup>c,\*</sup>, Yongsheng Ma<sup>a</sup>, Xinmin Song<sup>d</sup>, Yongjun Wang<sup>d</sup>, Zhangxin Chen<sup>b</sup>
- <sup>a</sup> School of Earth Sciences and Resources, China University of Geosciences (Beijing), Beijing 100083, China
- <sup>b</sup> Chemical and Petroleum Engineering, University of Calgary, Calgary, Alberta T2N1N4, Canada
- <sup>c</sup>Oil and Gas Research Center, Peking University, Beijing 100871, China
- 8 de PetroChina Research Institute of Petroleum Exploration and Development, Beijing 100083, China
- 9 **Abstract:**

Although numerous progresses have been achieved in characterizing marine shales, studies that are 10 associated with lacustrine shales are limited. To study lacustrine shales, samples were collected from 11 the Jurassic Da'anzhai Member in the central Sichuan Basin of China, and their mineralogical, reservoir, 12 OM, and paleoenvironmental characteristics were determined, as well as the relationships between them. 13 Analysis of trace elements reveals that the shales formed in paleoenvironments that were oxic to suboxic, 14 dry to humid, had moderate to strong weathering, and were characterized by fresh to salt water 15 conditions. These environments are more variable than those of marine shales. The paleoenvironmental 16 conditions and mineralogy of the shales, particularly the oxic to suboxic paleo-redox conditions, resulted 17 in the relatively low levels (0.11-2.18%, average 0.97%). However, based on evaluation criteria for 18 continental source rocks, the OM is of high quality because of its high level of maturity (R<sub>o</sub>: 0.95-1.43; 19 T<sub>max</sub>: 428-500°C) and favorable kerogen type (II<sub>2</sub>). There are well-developed intraparticle pores, 20

## Download English Version:

## https://daneshyari.com/en/article/8128539

Download Persian Version:

https://daneshyari.com/article/8128539

<u>Daneshyari.com</u>