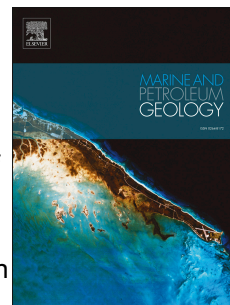


Accepted Manuscript

Gas hydrate reservoirs and gas migration mechanisms in the Terrebonne Basin, Gulf of Mexico

Jess I.T. Hillman, Ann E. Cook, Hugh Daigle, Michael Nole, Alberto Malinverno, Kevin Meazell, Peter B. Flemings



PII: S0264-8172(17)30284-2

DOI: [10.1016/j.marpetgeo.2017.07.029](https://doi.org/10.1016/j.marpetgeo.2017.07.029)

Reference: JMPG 3011

To appear in: *Marine and Petroleum Geology*

Received Date: 13 March 2017

Revised Date: 2 June 2017

Accepted Date: 24 July 2017

Please cite this article as: Hillman, J.I.T., Cook, A.E., Daigle, H., Nole, M., Malinverno, A., Meazell, K., Flemings, P.B., Gas hydrate reservoirs and gas migration mechanisms in the Terrebonne Basin, Gulf of Mexico, *Marine and Petroleum Geology* (2017), doi: 10.1016/j.marpetgeo.2017.07.029.

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.

Title: Gas hydrate reservoirs and gas migration mechanisms in the Terrebonne Basin, Gulf of Mexico

Jess I T Hillman ^{a*}, Ann E Cook ^a, Hugh Daigle ^b, Michael Nole ^b, Alberto Malinverno ^c, Kevin Meazell ^d and Peter B Flemings ^d

^a School of Earth Sciences, The Ohio State University, Columbus, OH, USA

^b Department of Petroleum and Geosystems Engineering, University of Texas at Austin, Austin, TX, USA

^c Lamont-Doherty Earth Observatory, Palisades, NY, USA

^d Jackson School of Geosciences, University of Texas at Austin, Austin, TX, USA

* jithillman@gmail.com Present address: GEOMAR Helmholtz Centre for Ocean Research, Marine Geodynamics, Wischhofstr. 1-3, 24148 Kiel, Germany

Abstract

The interactions of microbial methane generation in fine-grained clay-rich sediments, methane migration, and gas hydrate accumulation in coarse-grained, sand-rich sediments are not yet fully understood. The Terrebonne Basin in the northern Gulf of Mexico provides an ideal setting to investigate the migration of methane resulting in the formation of hydrate in thin sand units interbedded with fractured muds.

Using 3D seismic and well log data, we have identified several previously unidentified hydrate bearing units in the Terrebonne Basin. Two units are >100 m- thick fine-grained clay-rich units where gas hydrate occurs in near-vertical fractures. In some locations, these fine-grained units lack fracture features, and they contain 1-4-m thick hydrate bearing-sands. In

Download English Version:

<https://daneshyari.com/en/article/5782037>

Download Persian Version:

<https://daneshyari.com/article/5782037>

[Daneshyari.com](https://daneshyari.com)