

Accepted Manuscript

Empirically assessing the potential release of rare earth elements from black shale under simulated hydraulic fracturing conditions

Jon Yang, Circe Verba, Marta Torres, J. Alexandra Hakala



PII: S1875-5100(17)30440-7

DOI: [10.1016/j.jngse.2017.09.011](https://doi.org/10.1016/j.jngse.2017.09.011)

Reference: JNGSE 2351

To appear in: *Journal of Natural Gas Science and Engineering*

Received Date: 20 January 2017

Revised Date: 16 September 2017

Accepted Date: 27 September 2017

Please cite this article as: Yang, J., Verba, C., Torres, M., Hakala, J.A., Empirically assessing the potential release of rare earth elements from black shale under simulated hydraulic fracturing conditions, *Journal of Natural Gas Science & Engineering* (2018), doi: 10.1016/j.jngse.2017.09.011.

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.

1 Empirically assessing the potential release of rare earth elements from black shale under
2 simulated hydraulic fracturing conditions

3 Jon Yang¹, Circe Verba^{2*}, Marta Torres¹, J. Alexandra Hakala³

4 ¹College of Earth, Ocean, and Atmospheric Sciences, Oregon State University, Corvallis, OR
5 97331-5503

6 ²Research and Innovation Center, National Energy Technology Laboratory, US Department of
7 Energy, Albany, OR 97321

8 ³Research and Innovation Center, National Energy Technology Laboratory, US Department of
9 Energy, Pittsburgh, PA 10940

10 *Corresponding author

Download English Version:

<https://daneshyari.com/en/article/8128427>

Download Persian Version:

<https://daneshyari.com/article/8128427>

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