

GEOLOGICAL SOCIETY SPECIAL PUBLICATION NO. 319

Sediment-Hosted Gas Hydrates: New Insights on Natural and Synthetic Systems

EDITED BY

D. LONG

British Geological Survey, Edinburgh, UK

M. A. LOVELL

University of Leicester, UK

J. G. REES

British Geological Survey, Keyworth, UK

and

C. A. ROCHELLE

British Geological Survey, Keyworth, UK

2009

Published by
The Geological Society
London

Contents

Obituary	vi
LONG, D., LOVELL, M. A., REES, J. G. & ROCHELLE, C. A. Sediment-hosted gas hydrates: new insights on natural and synthetic systems	1
RIEDEL, M., COLLETT, T., MALONE, M. J. & IODP EXPEDITION 311 SCIENTISTS. Gas hydrate drilling transect across northern Cascadia margin – IODP Expedition 311	11
KLEINBERG, R. L. Exploration strategy for economically significant accumulations of marine gas hydrate	21
MCGEE, T., MACELLONI, L., LUTKEN, C., BOSMAN, A., BRUNNER, C., ROGERS, R., DEARMAN, J., SLEEPER, K. & WOOLSEY, J. R. Hydrocarbon gas hydrates in sediments of the Mississippi Canyon area, Northern Gulf of Mexico	29
MAZURENKO, L. L., MATVEEVA, T. V., PRASOLOV, E. M., SHOJI, H., OBZHIROV, A. I., JIN, Y. K., POORT, J., LOGVINA, E. A., MINAMI, H., SAKAGAMI, H., HACHIKUBO, A., SALOMATIN, A. S., SALYUK, A. N., PRILEPSKIY, E. B. & CHAOS 2003 SCIENTIFIC TEAM. Gas hydrate forming fluids on the NE Sakhalin slope, Sea of Okhotsk	51
SWART, R. Hydrate occurrences in the Namibe Basin, offshore Namibia	73
CAMPS, A. P., LONG, D., ROCHELLE, C. A. & LOVELL, M. A. Mapping hydrate stability zones offshore Scotland	81
MINSHULL, T. A. & CHAND, S. The pore-scale distribution of sediment-hosted hydrates: evidence from effective medium modelling of laboratory and borehole seismic data	93
TINIVELLA, U., LORETO, M. F. & ACCAINO, F. Regional versus detailed velocity analysis to quantify hydrate and free gas in marine sediments: the South Shetland Margin case study	103
EATON, M. W., JONES, K. W. & MAHAJAN, D. Mimicking natural systems: methane hydrate formation–decomposition in depleted sediments	121
KVAMME, B., GRAUE, A., BUANES, T., KUZNETSOVA, T. & ERSLAND, G. Effects of solid surfaces on hydrate kinetics and stability	131
ANDERSON, R., TOHIDI, B. & WEBBER, J. B. W. Gas hydrate growth and dissociation in narrow pore networks: capillary inhibition and hysteresis phenomena	145
KLAPP, S. A., KLEIN, H. & KUHS, W. F. Gas hydrate crystallite size investigations with high-energy synchrotron radiation	161
ROCHELLE, C. A., CAMPS, A. P., LONG, D., MILODOWSKI, A., BATEMAN, K., GUNN, D., JACKSON, P., LOVELL, M. A. & REES, J. Can CO ₂ hydrate assist in the underground storage of carbon dioxide?	171
Index	185