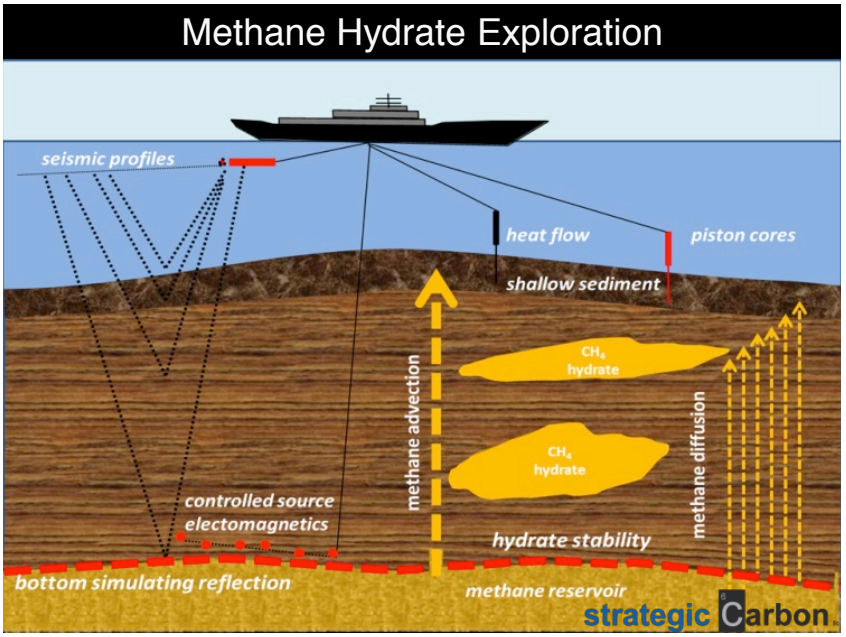
strategic Carbon llc

COASTAL CHINA METHANE HYDRATE DRILL SITE ASSESSMENT

OVERVIEW – For Chinese exploration of potential methane hydrate loading in their coastal region Strategic Carbon (SC) LLC will provide methane hydrate site assessment prior to deep hydrate well drilling and logging. This activity optimizes drill site selection and provides significant cost savings. Typical borehole drilling and well logging costs 10-20 million USD. An expedition that utilizes geochemical, geological, and geophysical analyses to guide borehole site selection can cost as little as 1 – 2 million USD. Strategic Carbon founders have demonstrated the benefits of a complete pre-drilling site survey: 1) In expeditions off the mid-Chilean margin, geochemical data indicated low deposits of deep sediment methane while seismic (only) data indicated high methane hydrate deposits; 2) At Atwater Valley, on the Texas-Louisiana Shelf, a raised seismic bottom simulating reflection was correlated with porewater chloride anomalies and methane advection showing deep salt diapirs reduced; 3) A recent survey of methane hydrate deposits on the Chatham Rise found no vertical methane fluxes in a large region where, conversely, seismic data had indicated high hydrate potential.



APPROACH – Borehole site selection is based on a thorough review of seismic data and subsequent field work for geochemical, geological, and geophysical data. Geochemical data focuses on the depth of downward seawater sulfate diffusion into sediment that is controlled by upward vertical methane flux and the anaerobic oxidation of methane (AOM). The depth of the sulfate-methane interface is dependent on the volume of methane and, with high vertical flux rates, this interface is shallow. A wide variety of additional field analyses contribute to interpretation of the geochemical and seismic data; 1) high heatflow suggesting rapid vertical fluid and gas fluxes is expected to be observed at locations where geochemical profiles show a shallow sulfate-methane interface; 2) stable carbon isotope analysis of methane and carbon dioxide provides assessment of the gas source (microbial or thermogenic); 3) geological review through the coring sites provides an estimate of the system capacity to trap hydrates through the hydrate stability zone and estimate the potential loading; 4) controlled source electromagnetic data is being developed for assessment of the vertical distribution of methane hydrate loadings.

EXPECTED SIGNIFICANCE – Data gathering in this effort is designed to provide a thorough assessment of potential deep sediment methane hydrate loadings. With additional interpretation of hydrate vertical loadings and spatial variations in methane hydrate stability zones, more certain drill sites can be selected. These data further support the need to conduct long term monitoring of environmental impacts.

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