

GOM²: Prospecting, Drilling and Sampling Coarse-Grained Hydrate Reservoirs in the Deepwater Gulf of Mexico

Peter B. Flemings and the UT GOM2-1 Science Team

From 2-May-2017 to 22-May-2017, the UT-GOM2-1 Hydrate Pressure Coring Expedition drilled two wells in Green Canyon Block 955 (GC 955) in the deepwater Gulf of Mexico: Hole GC 955 H002 (H002) and Hole GC 955 H005 (H005) (Figure 1). 21 10 ft (3.05 m) pressure cores were attempted in and near the methane hydrate reservoir. In the first hole, H002, 1 of the 8 cores were recovered under pressure and there was 34% recovery of sediment (both pressurized and depressurized). In the second hole, H005, 12 of the 13 cores were recovered under pressure and there was 72% recovery of sediment. The pressure cores were imaged and logged under pressure. Samples were quantitatively degassed either on-board or on-shore to determine the hydrate concentration and the gas composition. Pore water analyses were performed on depressurized samples, and sediment samples were collected to enable characterization of the microbial community. Figure 2 illustrates an example result. 21 3.3 ft (1 m) vessels containing pressure core sections were returned to the University of Texas for storage, distribution, and further analysis. These cores will provide a foundation for scientific exploration by the greater hydrate research community.

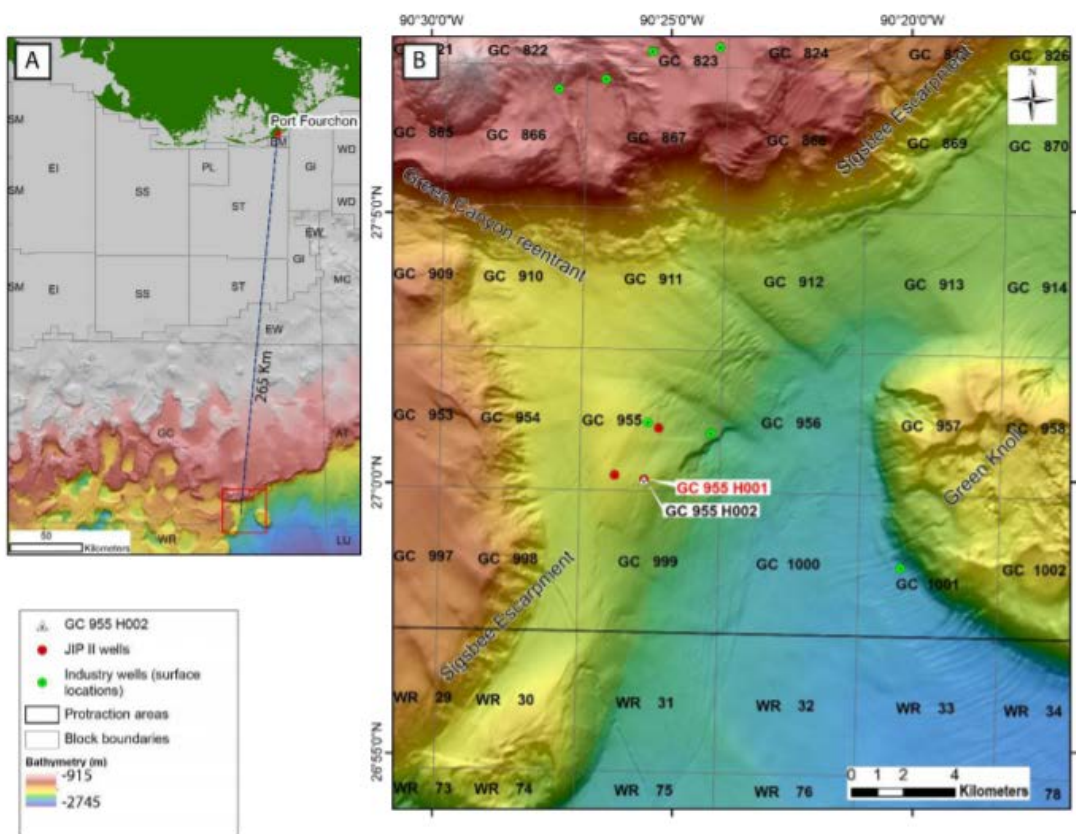


Figure 1: (A) GC 955 is located 232 km south-south-west of Port Fourchon, LA., at the foot of the Sigsbee Escarpment. (B) The UT-GOM2-1 Expedition drilled 2 holes at Green Canyon 955 within 30 meters of the previously drilled Hole GC 955 H001. GC Block 955 is at the toe of the Sigsbee Escarpment adjacent to the Green Canyon reentrant. Bathymetry data from the BOEM Northern Gulf Of Mexico Deepwater Bathymetry Grid (<https://www.boem.gov/Gulf-of-Mexico-Deepwater-Bathymetry/>).

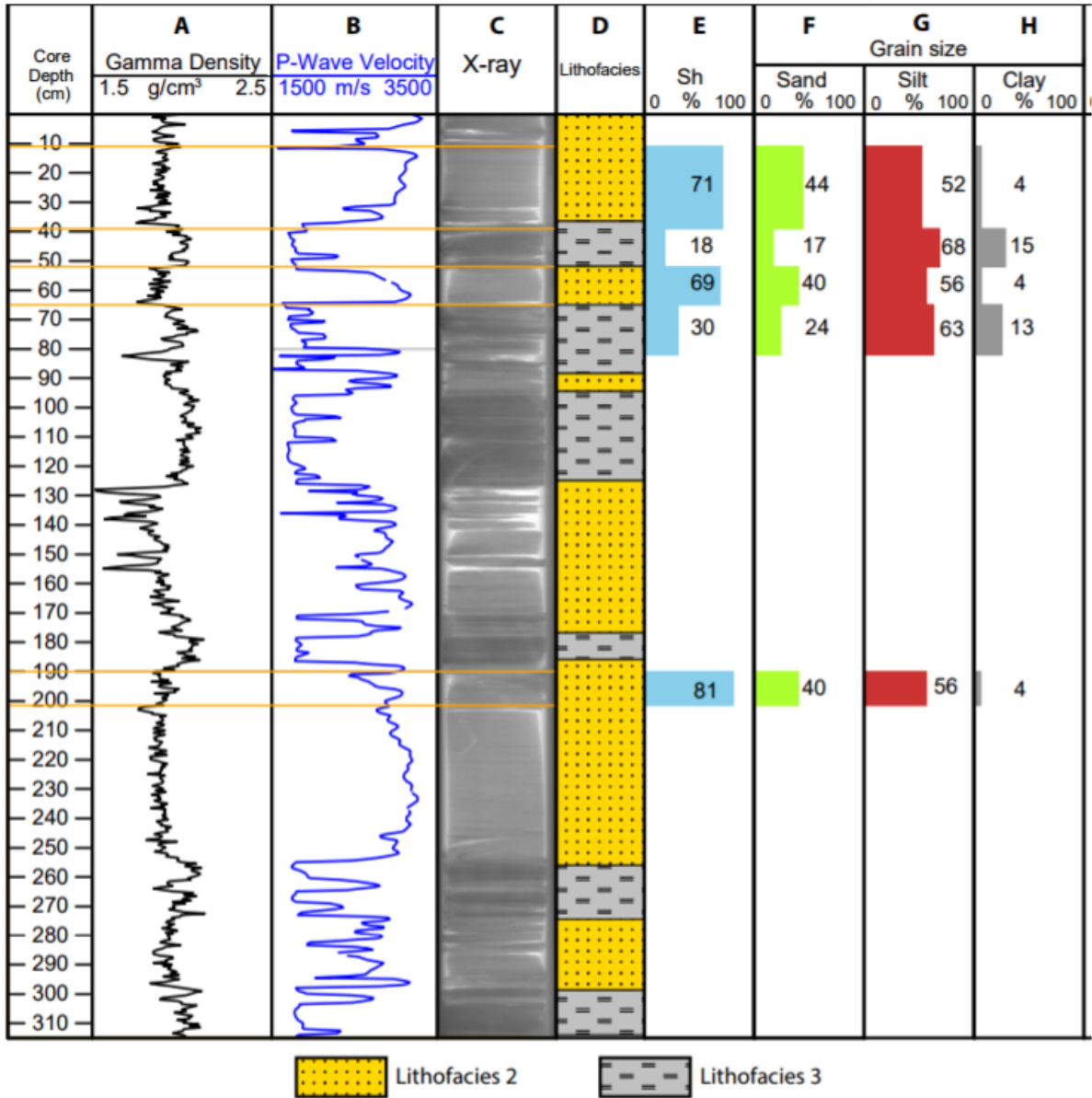


Figure 2: Pressure core results with lithofacies-specific hydrate saturation (Sh) for core UT-GOM2-1-H005- 4FB.