Figure captions for GSA Data Repository items associated with GEOLOGY MS G18088

(glaciohydraulic supercooling in Iceland. M. J. Roberts *et al.*)

FIGURE CAPTION FOR FRAZIL-FLOC IMAGE

Incipient frazil ice floc retrieved from a subglacial artesian vent at Skaftafellsjökull, Iceland (July 2000). Angular platelets of clean, bubble-free ice interlock to form the overall shape of the floc. The core of the floc contains localised sandy nodules, which may represent the initial nucleus for frazil ice accretion. During periods of high discharge, sediment-laden frazil flocs adhere to the inner walls of artesian vents, and continue to trap suspended sediment. The occurrence of this type of icing is diagnostic of supercooled discharge, induced by a sudden increase in hydraulic elevation and associated decrease in glaciostatic pressure. Note the hand for scale.

Photographer: Dr Matthew J. Roberts, July 2000.

FIGURE CAPTION FOR GLACIER IMAGE

Oblique aerial view of Skeiðarárjökull, Iceland partway through the rising stage of the November 1996 glacial-outburst flood. Sediment-laden floodwater is issuing from multiple ice-marginal and supraglacial outlets, positioned across the 23 km wide terminus of the glacier. Remarkably, some subglacial floodwater has burst through hundreds of metres of ice to produce transient supraglacial fracture outlets. Such a rapid change in floodwater elevation induces a sudden decrease in glaciostatic pressure, thus creating supercooled floodwater. These conditions propagate frazil ice, which traps suspended sediment as it accretes within the glacier.

Photographer: Professor Helgi Björnsson, November 1996.