

The influence of seawater on magnetite tailing rheology

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© 2018 Elsevier Ltd It is well known that seawater affects mineral beneficiation, especially in the presence of fine particles. In the present paper, the effect of seawater fraction on the rheology of unflocculated fine magnetite tailings has been studied. Slurry data has been interpreted as both Bingham and Herschel-Bulkley fluids. To relate the experimental results with surface physicochemical properties, zeta potential measurements have been performed to the samples. Results show that besides the well known result that the yield stress and Bingham viscosity have a strong dependency on the particle concentration, the yield stress has been found highly sensitive to the seawater fraction. In contrast, the plastic viscosity observed a comparatively weaker dependency on this variable.