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New technologies that will potentially enable processing of complex orebodies

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ABSTRACT

There has been minimal innovation in the methods used to process an ore over the last 50 years. Productivity increases have resulted in increased equipment size without implementation of parallel improvements in technology. Complex orebodies of the future will need mining operations to adopt new technologies and techniques to make future ore treatment economically viable. This paper will review three emerging technologies, namely high voltage pulse pretreatment, fine screening and the HydroFloat coarse particle flotation cell which have the potential to be used in combination to reject low grade ore prior to processing, coarsen grind size and reduce the energy required for comminution, improve flotation separation recoveries and improve dewatering. The paper will outline the potential benefits that have been observed when applying these technologies and discuss the barriers that must be overcome before they can be adopted by industry with confidence.