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The Toowong Process for Treatment of Complex Ores

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ABSTRACT

Increasing contamination of concentrates is an issue of global commercial and health / environmental significance. With increasing environmental pressures at smelters, penalties for contaminants in concentrates continue to rise, accompanied by lower reject limits. There is a strong incentive for miners to investigate alternative means to remove contaminants in order to valorise complex ores and concentrates.

The Toowong Process is a patented hydrometallurgical treatment process designed to remove arsenic, antimony and other penalty elements from base metal and precious metal concentrates. The products of the process are premium concentrates that are suitable for conventional smelting without incurring smelter penalty fees. The technology was developed by Core in Brisbane, Australia with support from Core's engineering partner the Downer Group. The Toowong Process has received widespread recognition in the industry as a game changing technology with the potential to deal with this global environmental problem.

The value that the Toowong Process presents for mining operations lies not simply in a treatment process for the removal of arsenic, but in its potential to enable a re-optimisation of the mine schedule without the constraint of planning around deleterious elements. Further to this there are opportunities for the mine to improve its social license to operate and to develop a sustainable business case that is insensitive to fluctuating smelter penalty rates.

The Toowong Process has the potential to unlock many future mines whose developments are hindered by contamination. The technology also has the potential to be deployed across the product value chain, from metal traders to concentrate smelters.

This paper discusses the global problem of contamination in complex ores and concentrates, how the Toowong Process technology is one potential solution to this problem and the opportunities this technology brings to the business of dealing with deleterious elements.