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## **CARNALLITITE SOLUTION MINING PROPOSED FOR MAGMINERALS' KOUILOU POTASH PROJECT IN THE REPUBLIC OF CONGO**

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### **Abstract**

MagMinerals Inc., a unit of MagIndustries Corp., (TSX-V:MAA), is developing a potassium chloride (KCl) plant through solution mining of carnallite<sup>1</sup> in the Kouilou region of the Republic of Congo (capital Brazzaville, West Africa). A bankable feasibility study for this project is planned to be finished by the end of this year.

MagMinerals Kouilou Project has a planned capacity of 580,000 tonnes per year of potash fertiliser (MOP). The product output will mostly be granular KCl which will be directed primarily to the target markets of South Africa, Brazil and Europe. The Kouilou Potash Plant is expected to be commissioned by late 2010, with first shipments in early 2011.

The investigated area is located near the village of Mengo, about 15 km NW of the coastal city of Pointe Noire in the Republic of Congo. In this region a thick sequence of layered salt rocks occur at depths below surface between 450 and 1200m. The salt rocks mainly consist of rock salt (layers up to 100m thickness) interlayered with carnallitite (layers up to 25m thickness) and minor amounts of clay/dolomite (few layers < 1m thickness).

Within this sequence 4 carnallitite horizons have been identified at depths between 470 and 850m, with an average thickness > 10m and grades between 45 and 90% Carnallite (~11 to 22% KCl), which are considered suitable to be mined by solution mining.

This presentation will recapitulate high level findings of the current reserve confirmation program consisting of 23km of 2D seismic lines as well as 13 production wells and the envisaged solution mining concept for this deposit. A brief summary of rock mechanical cavern and pillar dimensioning will be provided.

A solution mining concept has been developed for this deposit featuring hot leaching at dual well caverns of the mineable carnallitite horizons within the deposit. Options for adaptation of standard solution mining techniques considering the specific deposit parameters and the requirement of processing as well as the impact of climate and energy frame conditions will be discussed.

**Key words:** Africa, Bedded Salt Deposits, Cavern Design, Geology, Magnesium Minerals, Potash, Potassium Minerals (Carnallite, Potassium Carbonate)