

#### **ASX ANNOUNCEMENT AND MEDIA RELEASE**

14 November 2016

# **INVESTOR UPDATE**

### **HIGHLIGHTS**

- International group of analysts and fund managers to visit the Namdini Project
- 4Moz maiden resource has potential to grow active drilling campaign underway
- Metallurgical testwork has achieved flotation gold recoveries of 90% contained within 2% to 3% of the original rock mass
- After flotation, potentially only 2% to 3% of the rock mass needs to be processed further to extract gold
- High grade (greater than 50 grams per tonne) gold concentrates have been produced in initial testwork
- Results indicate potential for a conventional milling-flotation-concentrate regrind-carbon in leach (CIL) operation

**Cardinal Resources Limited** (ASX: **CDV**) **("Cardinal"** or **"the Company"**) is pleased to announce the release of an investor update to coincide with Australian and International Analyst / Fund Manager site visit of the Namdini Project this week.

The site visit, commencing on the 17 November 2016, is well timed, following the recent release of the 4 million ounce (Moz) maiden JORC Resource at Namdini (refer to ASX announcement dated 7 November 2016 4 Million Ounce Maiden Resource at Namdini).

Flotation testwork indicates fast floating characteristics and an efficient 'mass pull', which has achieved 'rougher' (or first stage) flotation gold recoveries of 96% and 'cleaner' (or second stage) flotation gold recoveries of 90% contained within 2% to 3% of the original rock mass, for a 'cleaner' concentrate grade of 54.6g/t and a high sulphur content (48%).

The initial metallurgical testwork was conducted on a drill hole which was chosen due to its central location within the deposit with the occurrence of gold mineralisation in all three key lithologies (metavolcanics, granite and diorite). The metallurgical sample was collected so that it matched the percentage distribution of lithologies, based on the drilling information in May, and the mean composite gold grade above a notional 0.4g/t gold cut off. The metallurgical sample was also designed to match the typical range of gold grades within each lithology. A total of 332 kilograms (kg) were collected and arrived into the lab during July. Further metallurgical testwork is underway to expand and optimise the initial metallurgical testwork.

# Commenting on the metallurgy results, Cardinal Resources Technical Manager Dr Julian Barnes:

"The initial metallurgical test work results are very encouraging. The tests indicate that there is good potential to produce a very efficient low mass 'pull', enabling us to work towards a flowsheet wherein it is possible to remove over 98% of the mineralised rock mass after the milling and flotation step. Tests have indicated that the resulting flotation concentrate has achieved 95% to 96% gold recovery into the rougher concentrate and up to 90% gold recovery into the cleaner concentrate, with high gold grades of up to 55g/t and a high sulphur content.

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This gives Cardinal a potentially robust processing flowsheet that can utilise a conventional crush-mill-flotation-concentrate regrind-CIL route which has been successfully applied in many operations worldwide."

Dr Barnes further commented that there were a number of key reasons why the results were so encouraging.

"Namdini is not a low-grade deposit when you look at it from a metallurgical viewpoint. Once you are through the flotation circuit, it can be considered a very high-grade deposit. After flotation, the mass of material requiring further processing is reduced to 2% to 3%. We can afford to do a lot to a potentially small daily tonnage like that, with a much smaller 'back end' of the plant.

"The efficient mass pull also means that you have the opportunity to work with a very high-value concentrate (approximately USD \$2,000/t at current spot gold prices) which has attractive characteristics. In addition, the fast floating characteristics open up possibilities for an efficient flotation circuit which we will further enhance by testing with the latest developments in flotation technology."

Dr Barnes noted that results also highlighted the Namdini ore was amenable to SAG milling and Cardinal and their consultants have identified a wide range of additional options to increase gold recoveries from the current 'base case' recovery of 75% to 76%.

"The overall sulphur content of the master composite is around 1%," he said. "If this low overall average sulphur content is typical for the entire Namdini deposit, which we are assessing in our current metallurgical scan sampling programme, then we have the potential to further reduce the mass pull. An additional benefit of reducing the mass pull below 2% is that the head grade of the concentrate has the potential to increase, along with the sulphur content. The metallurgical scan sampling programme is designed to produce a three dimensional model of the entire Namdini deposit, detailing bottle roll cyanidation gold recovery, sulphur and carbon distribution along with a 49 element ICP scan in order to guide the next phase of metallurgical testwork."

"So there are a lot of factors we will work on, each of which could add incremental percentage recovery."

## Managing Director Archie Koimtsidis said:

"Cardinal is encouraged by the maiden resource and metallurgical results. The size of the resource exceeded our expectations. The orebody remains open at depth and along strike and there is significant scope to expand our resource base with further drilling.

"An active diamond drilling campaign, currently comprising 4 drill rigs, is currently underway, targeting extensions to the existing resource."

The metallurgy results, while preliminary in nature, demonstrate the Company has a number of attractive options to consider, but all involve a project that can utilise conventional CIL processing technology."



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#### **JORC 2012**

This announcement contains information extracted from the following report(s) which are available for viewing on the Company's website www.cardinalresources.com.au:

7 November 2016 4 Million Ounce Maiden Resource at Namdini

### No new information

The Company confirms that it is not aware of any new information or data that materially affects the information included in any original ASX market announcements relating to exploration activities (including exploration results) carried out at the Namdini Project and that all material assumptions and technical parameters underpinning the exploration activities (including exploration results) and estimates of mineral resources or ore reserves in the relevant market announcements continue to apply and have not been materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

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