

**THE COASTWATCHERS ASSOCIATION INC.**

**SUBMISSION TO THE COMMONWEALTH DEPARTMENT OF THE ENVIRONMENT**

**TITLE OF REFERRAL**

**Proponent: Big Island Mining Pty Ltd,  
Majors Creek Road, Majors Creek NSW  
Dargues Gold Mine  
Third Modification**

**REFERENCE NUMBER: 2015/7539**

**4 September 2015**

**Synopsis**

**The Coastwatchers' Association Inc. requests that the Dargues Mine proposal as modified by Modification 3 be assessed as a controlled action under sections 18 and 18A of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) because of likely significant impacts on threatened species and communities listed as matters of national environmental significance.**

## **THE COASTWATCHERS ASSOCIATION INC.**

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**4 September 2015**

**Coastwatchers Association Inc.,  
PO Box 521  
Batemans Bay NSW 2536**

## 1. COASTWATCHERS ASSOCIATION INC.

The Coastwatchers Association Inc. is an incorporated association based at Batemans Bay NSW. It represents community members on the South Coast of NSW, who have concerns about local environmental issues. The Association has successfully represented its members for 30 years. Its' principal aims are:

*To take action to protect the natural environment and preserve the integrity of ecological systems in the Eurobodalla and Shoalhaven areas of New South Wales*

*To oppose the unnecessary destruction and degradation of natural systems, unbalanced development, and pollution.*

The Association opposed the 2010 Development Application to develop the Dargues Reef mine by Big Island Mining Pty. Ltd., then a subsidiary of Cortona Resources Limited. The Association submission to the 2015 'Modification 3' application by the proponent to NSW Planning is attached as Appendix A, together with Appendices to that submission as Appendix B.

## 2. BACKGROUND

The project as originally approved was determined in January 2011 to be a "controlled action" due to the significance of its likely impact on listed threatened species and communities. The project as originally approved holds an approval under the EPBC Act (2010/5770). This approval is for mine operations that involve the off-site processing of ore.

The project has been modified on two occasions and no amendment of the EPBC Act approval, was sought.

The proponent now proposes through their 'Modification 3' application to NSW Planning, to fundamentally amend the project, which will significantly increase environmental risks. These significant changes include:

- a. The introduction of on-site cyanide processing operations, creating transportation, storage and handling risks as well as issues associated with the resulting contaminated concentrate of heavy metals and toxic water waste in the tailings dam.
- b. The size, nature and purpose of the proposed tailings dam to be radically different. It is proposed to increase the size of the tailings dam by 78% from 9ha to 16ha.
- c. The tailings dam is proposed to be located within an existing valley, which drains into Spring Creek, then the Deua River and finally 50-60 km later to Moruya on the South Coast of

NSW. The Deua River being the source of 85% of the Eurobodalla Shire's water supply.

- d. The tailings dam is located on the eastern side of the Great Dividing Range, **not the western side** as stated on page 6 of the proponent's referral. The western side has never been an planning option, as no potential toxic spill can ever enter the Sydney Water Catchment.
- e. The disturbance area of the project will increase by 41% from 33.1 ha to 46.8 ha (including a new waste rock emplacement created (approx. 6 ha).
- f. An increase in resource extraction by a third from 1.2 to 1.6 million tonnes.
- g. A new transport crossing over Spring Creek for heavy vehicles, a new contaminated concentrate pipeline, and a new the paste/fill pipeline.

The project as previously approved was determined to be a "controlled action". This new project proposed under Modification 3 is at the same location, with a larger project area and carries significantly more risks to matters of national environmental significance than the prior iteration of the project.

### | 3. SITE LOCATION AND SIGNIFICANCE OF IMPACT

The project site is located in a sensitive location. It is at the headwaters of a river system that supplies 85% of the Eurobodalla Shire's drinking water for its 70,000 residents. This population swells to 100,000 in holiday periods. It is near the township of Majors Creek, on steep land and upstream of a significant agricultural areas.

The assessment undertaken for the project as originally approved by the NSW Government (Gaia Research Pty Ltd: 2010) identifies at Table 13, 30 EPBC Act listed species with potential to occur on the (smaller) project site.

A further document is attached entitled "Threat to Endangered Species, Critically Endangered Species and Threatened Species in the Conservation Areas below the Proposed Mine Site". This is attached as Appendix D.

In its submission to the NSW Department of Planning and Environment dated 26 August 2015 the NSW EPA has stated that it does not support the proposed modification. In particular, the NSW EPA said the following:

*" The proposed use of cyanide in on site processing will result in an enlarged Tailings Storage Facility (TSF) being required. As a result*

*of on-site processing, the tailings that will be disposed of in the TSF will contain heavy metals, will be acid generating and will contain residual cyanide. This TSF is proposed to be placed in a gully located at the top of the upper Deua river catchment and will remain in place after the mine has finished its operations.*

*The EPA considers that the placement and operation of a large tailings storage facility containing heavy metal tailings and residual cyanide at the top of a water catchment poses significant environmental and community risk that cannot be effectively mitigated. In forming this opinion the EPA note that the upper Deua River supplies drinking water for the people of Eurobodalla, water for agricultural irrigation, stock and domestic use and feeds through the Majors Creek State Conservation Area."*

The Coastwatchers Association Inc. shares the concerns of the EPA approval under the Commonwealth's EPBC Act. In particular, there are major risk increases from a major tailings dam overflow or failure, which will have significant if not catastrophic impacts on threatened and endangered species downstream. There is a worldwide history of major tailings dam spills, leading to catastrophic disasters. . Two examples of disasters are listed below. Further examples are in Appendix A of the Coastwatchers' submission to NSW Planning.

In 2000, the tailings dam in the **Baia Mare** mine in Romania burst releasing 100,000 m<sup>3</sup> of waste into local rivers, then into the Danube ending in the Black Sea. The spill travelled for well over 100km. It was described as the worst environmental disaster in Europe since Chernobyl.

Last year in 2014 at the **Mt Polley** mine in Canada, a tailings pond breached and released 4.5 million m<sup>3</sup> of toxic slurry and 10 million m<sup>3</sup> of toxic wastewater. This tailings dam was 4 sq km in area and ended up in lakes miles downstream. Mine safety experts have called the spill one of the biggest environmental disasters in modern Canadian history. (Source: various press reports)

If there was to be a catastrophic disaster at the Dargues Reef mine, major environmental impacts could not be avoided as Majors Creek is only 50-60 km to the coast, and the mine at Majors Creek is at 424 m above sea level. A tailing dam breach will naturally and rapidly flow to the ocean killing all flora and fauna in its path, whether endangered or not. And this river passes through through two pristine ecological areas, the **Deua National Park** and finishes in the **Batemans Marine Park**.

The project as originally approved involved the offsite processing of ore. Numerous commitments have been made to the community that the mine would never process ore on-site. Instead the proponents have said that there would be off-site processing at Parkes in central NSW, or Bendigo in Victoria.

#### **4. LACK OF ENVIRONMENTAL ASSESSMENT**

The environmental assessment for the project proposed in "Modification 3" is limited to a desktop review of the mine site ONLY. This level of assessment is patently inadequate to enable a decision maker to determine whether this new project involving cyanide, heavy metals and toxic water, is likely to have a significant impact downstream of the mine in the event of a spill. The potential impact on matters of environmental significance has not been properly undertaken.

In summary, the environmental assessment information provided by the proponent:

- a. is limited to a desk top identification of species considered likely to occur within the project area (this desktop assessment identifies the species protected under the EPBC Act to occur on the project site);
- b. does not adequately consider impacts of the project on species located in the project area;
- c. makes no consideration of the potential impact on species (whether endangered or not) outside the project area in the 60 km of river to the coast;
- d. does not assess the current status or impact of the revised project on the two particular matters of national environmental significance noted in the 2010 EPBC Act approval, namely the:
  - "natural temperate grasslands of the Southern Tablelands of NSW and the Australian Capital Territory" (At least 0.2 hectares of which were at the time of the 2010 approval located on the project site); and
  - Araluen Gum, *Eucalyptus kartzoffiana*,

#### **5. FAUNA MORTALITY**

The proponent has noted a need to monitor fauna use of the tailings dam, rescue bogged fauna, investigate deaths and remove carcasses. This suggests a high potential for impacts on fauna especially migratory and water birds. The proponent's toxicology report has been used to infer that, subject to a number of assumptions, a spill from the tailings dam is unlikely to kill certain species of wildlife. No assessment has been made of potential

implications due to direct exposure to the contents of the tailings dam when less diluted. Given the presence of listed endangered species on the site, this is a serious omission.

## 6. NSW MODIFICATION 3

Submissions made to the Department of Planning and Environment in respect of the 'Modification 3' planning approval, have only just been placed on public viewing and little consideration of these has been made in the time. However, Coastwatchers have identified deficiencies in the proponent's environmental assessment and the potential for significant adverse environmental impacts associated with:

- a. a spill or overflow from the tailings dam, which will store byproducts of the cyanide treatment process, such as cyanide, toxic heavy metals and toxic water;
- b. a catastrophic failure of the tailings dam, leading to an environmental disaster in the Deua River, the closure of the Eurobodalla Shire's water supply, and the closure of water supplies to residents along the river and to farmers and horticulturalists.
- c. a spill of sediment rich water;
- d. an incident on the proposed crossing of Spring Creek; and
- e. increased groundwater inflow to the mine and rainfall diversion to the west into the Shoalhaven River, with a consequential decrease in water flow to Major's Creek.

The submission made by Dr Emmett O'Loughlin, an expert hydrologist, casts doubt on the reliability of the environmental assessment undertaken by the proponent with respect to the capacity of the tailings dam. (O'Loughlin's submission is attached as Appendix C.)

O'Loughlin questioned the accuracy of Knight Piesold's rainfall and evaporation data, casting enormous credibility over the entire application and future of the project. Knight Piesold advised that even in extreme storm events the tailings pond capacity was adequate to avoid water discharging over the spillway. That assurance is now in question.

O'Loughlin's submission pointed out that the rainfall and evaporation data are incorrect, as Knight Piesold used estimates of Braidwood data rather than the actual Bureau of Meteorology (BOM) data. The rainfall data was underestimated and the evaporation data over estimated resulting in a significant bias. As well they ignored using Major's Creek data where rainfall was 30% higher than Braidwood. The end result was that the tailings dam

would most probably be inadequate and will overflow regularly. There are site limitations to increase the dam size. The same use of erroneous data occurred in 2010 with the initial Development Application was considered, but was never identified because the data was privileged because of legal action.

This submission is relevant to any assessment by the Commonwealth Department of Environment of the likelihood of impacts to matters of national environmental significance.

## 7. CONCLUSION

**The Coastwatchers' considers that the additional risks arising from the proponents 'Modification 3' are so significant as to require a formal assessment and approval under the Commonwealth's EPBC Act. In particular, there are major risk increases from a major tailings dam overflow or failure, which will have significant if not catastrophic impacts on threatened and endangered species downstream.**

The increased risks of the project on the environment, including downstream listed threatened species and communities, is evidenced by the risk mitigation measures proposed by the proponent which include regular (multiple times daily) inspections of the pipelines, Spring Creek crossing, the processing plant and sediment levels in storage facilities.

Aside from risk issues associated with the capacity and integrity of tailings dam and pipelines, the proponent has not provided evidence of appropriate controls to ensure that concentrate released to the tailings dam is always within the parameters assessed by its consultants.

The mine has not shown itself to be capable of managing risks associated with the current approved project as evidenced by the three sediment spill incidents in 2013 and the incident involving the illegal use and spill of flocculent chemicals again in 2013. These incidents were investigated by the NSW EPA and the first two incidents were prosecuted resulting in fines of \$196K being imposed on Unity for costs and penalties.