

Ecological baseline study outlines approach to minimise potential wildlife risks

A baseline ecological study into hypersaline tailings discharge at the Tropicana Gold Mine has recommended establishing up to eight artificial water bodies outside the fenced Tailings Storage Facility (TSF) to attract wildlife away from the potential tailings water source.

The study was undertaken jointly by AngloGold Ashanti Australia and Donato Environmental Services from January 2012 to March 2013 and was aimed at predicting the potential risks to wildlife once the TSF was operational.

The investigation into wildlife interactions with water bodies was undertaken using man-made water bodies and remote survey technology, particularly infrared and motion detection cameras.

So why was this study commissioned?

The study is part of the Tropicana Gold Mines certification process for the International Cyanide Management Code. Unlike most established mine sites which have obtained certification under the code, Tropicana does not yet have an operational tailings facility that can be assessed in terms of monitoring fauna interactions and potential impacts.

The objective of the Cyanide Management Code requires operations to implement measures to adequately protect wildlife and livestock from the adverse effects of cyanide process solutions and provides a numerical guideline of 50 mg/L weak acid dissociable (WAD) cyanide as an upper exposure limit when operating with fresh or low salinity water.

The Tropicana study has been broken into two parts – a baseline ecological study and an observational study of the tailings system, once operational, to enable the study to cover the operational phase as well.

Once discharge to the TSF begins it was recommended that a wildlife monitoring program be implemented for at least a further 12 months at the two original artificial water bodies.

The TSF at Tropicana will be a paddock-type facility capable of accommodating 7 million tonnes per annum of unconsolidated tailings and will be raised above the surrounding terrain, spanning a width of about 1,330 metres and length of 1,850m and covering a total area of around 290 hectares. To minimise impacts on local fauna the facility will be partly fenced and will have rock barriers established to limit land bases fauna egress. Tropicana will also trial bird scarers to discourage avian fauna.

Over the 14-months of the initial study a total of 99 bird species were observed or recorded, of those, 34% drank water from the water bodies. Most of the wildlife was recorded drinking from the fresh water bodies compared with the hypersaline water bodies.

Birds constituted the most visits to fresh water bodies during the period at 91%, while the majority of the visits to the hypersaline water bodies were by kangaroos at 51%.

During August 2012, 99% of all wildlife recorded drank at the fresh water bodies, while during December and February 2013 these proportions decreased slightly to 84% and 78% respectively. Drinking as a proportion of total wildlife visitations was lowest in April 2012 at 21%.

As a result of this work Tropicana has now established six artificial water holes in a range of habitats to attract both ground and avian fauna. These will be monitored to recorded utilisation and to verify the initial findings.