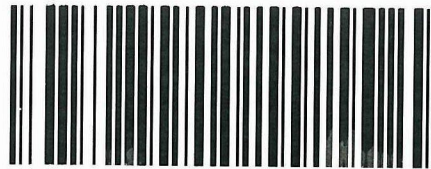




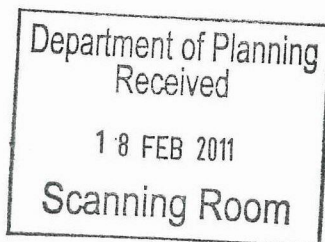
## Office of Water



PCU019686

16 February 2010

Kane Winwood  
Major Development Assessments  
Department of Planning  
GPO Box 39  
SYDNEY NSW 2001



c: Tim Baker  
t: 02 6841 7403  
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e: Tim.Baker@water.nsw.gov.au

Our ref : ER20981  
Your ref:

**Attention: George Mobayed**

Dear Mr Mobayed

### **DARGUES REEF GOLD PROJECT – RESPONSE TO NSW OFFICE OF WATER SUBMISSION**

I refer to your email dated 13 January, 2011 requesting a review of a response prepared by Big Island Mining Pty Ltd in relation to the NSW Office of Water's (the Office) submission dated 16 December 2010. Based on NOW's assessment of this information (detailed comments provided in Attachment A) the Office is able to support the proposal subject to the recommended conditions contained in Attachment B. The key issues identified in the assessment include the following:

- The need to revise the groundwater model based on monitoring to ensure the predicted impacts and mitigating measures are acceptable.
- The requirement to obtain appropriate licences under the *Water Act 1912* for groundwater interception and extraction with the purchase and transfer of entitlement if necessary.
- The Office is supportive of the proposed flow releases to mitigate the impact of reduced baseflows to the local surface water system. It is recommended this be implemented via a management plan with appropriate reviewing and reporting.
- Uncertainty in the reliance on groundwater by terrestrial vegetation has been identified. It is recommended further investigation be carried out prior to commencement of activities with appropriate input into relevant management plans.
- Comprehensive monitoring of groundwater and surface water is required to confirm the predicted impacts and determine the adequacy of mitigating measures.

For general enquiries in relation to this response please do not hesitate to contact Tim Baker on (02) 6841 7403.

Yours sincerely

**Mark Mignanelli**  
**Manager Major Projects and Assessment**

## ATTACHMENT A – DETAILED COMMENTS

- Uncertainty in groundwater model parameters and inadequate model calibration has resulted in uncertainties with the predictions concluded in the environmental assessment. However due to the nature of the groundwater system and the predicted impacts the Office supports the implementation of key mitigating measures via a Water Management Plan. This plan would enable monitoring, groundwater testing and ongoing refinement of the hydrogeologic model and the impacts of the development. In the event that the revised model outcomes result in impacts and responses which are not acceptable, the mitigating measures and/or the scale of operations would need to be reviewed.
- The proposed dewatering activities and groundwater extraction from the historic workings will require the applicant to obtain appropriate licences under the *Water Act 1912* with the necessary entitlement and if necessary the purchase and transfer of entitlement prior to commencement of activities.
- The Office supports the proposed release of flows into the local surface water system to mitigate the impact of the predicted reduction to baseflows. This is recognised as a make good provision and the released water will need to be sourced from an appropriately licensed supply and meet water quality standards and flow patterns of the receiving stream to maintain the current beneficial use. It is recommended the implementation of this flow release program be addressed within a separate management plan to address as a minimum the following:
  - Volume of flows
  - Source/s of water supply
  - Infrastructure requirements including release points
  - Timing of flows
  - Water quality of flows and treatment requirements.
  - Monitoring and management requirements
  - Reporting
- There is uncertainty in the reliance on groundwater by terrestrial vegetation in the zone impacted by groundwater drawdown. The EA has identified the presence of groundwater within 10metres of the surface within the alluvium at the site and although the EA has indicated the alluvium is highly disturbed, the vegetation map indicates the potential for endangered ecological communities (EEC) to exist in this area. The Office recommends further consideration by the proponent of the reliance on groundwater by the EEC's and the potential impact due to the proposed groundwater drawdown. It is recommended this be completed prior to finalisation of the relevant management plans (e.g. Biodiversity strategy and groundwater management plan) and prior to commencement of activities.
- The Office supports the proposed construction details of the Tailing Storage Facility liner to minimise groundwater contamination by achieving a permeability rating of  $1 \times 10^{-9}$ m/s. This will require monitoring and management via the construction of seepage collection structures at the toe of the facility and a monitoring piezometer network.
- Comprehensive monitoring of groundwater and surface water responses is a critical component of ensuring acceptable levels of impacts are maintained during

this project. This will require the development of an extensive monitoring network with ongoing metering, reporting and consultation with relevant stakeholders.

**End of Attachment A**  
**16 February 2011**

## ATTACHMENT B – RECOMMENDED CONDITIONS OF CONSENT

1. The proponent must ensure that it has sufficient water for all stages of the project to the satisfaction of the NSW Office of Water, and if necessary, adjust the scale of operations to match its licensed water entitlements.
2. To the extent that the proponent will need to obtain approvals under water legislation the NSW Office of Water will require production of a Water Management Plan with the following components:
  - Surface Water Management Plan
  - Groundwater Management Plan
3. The proponent must prepare the management plans prescribed in condition 2 in consultation with and to the satisfaction of the NSW Office of Water prior to commencement of activities.
4. The NSW Office of Water will require compliance with the Management Plans prescribed in condition 2 to ensure effective implementation of approvals required under water legislation.
5. The proponent must include a make good provision in the Water Management Plan to mitigate the impact of reduced baseflows. This will require the release of water of an appropriate volume and water quality based on consultation with the NSW Office of Water.
6. The proponent must obtain relevant licenses to the satisfaction of the NSW Office of Water under the *Water Act 1912* or *Water Management Act 2000* (whichever is relevant) for the following activities prior to commencement or impact of these activities:
  - Interception and extraction of groundwater from the proposed underground mine to 1) enable mining activities to occur safely, and 2) supplement the water supply.
  - Extraction of groundwater from existing historic mine workings for water supply.
  - Installation of monitoring piezometers.
  - Installation of weirs to monitor streamflow.
7. The proponent is to investigate the reliance on groundwater by terrestrial vegetation within the zone of drawdown and the potential impact of this drawdown. This is to be prepared in consultation with and to the satisfaction of NSW Office of Water prior to commencement of activities and finalisation of relevant management plans.

End of Attachment B

16 February 2011