NSW GOVERNMENT | Department of Primary Industries

OUT15/35826

Ms Phillipa Duncan
Mining Projects
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

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Dear Ms Duncan,

Dargues Reef Gold Project Modification 3 (MP 10_0054 Mod 3)
Comment on the Response to Submissions Report

I refer to your email dated 1 December 2015 to the Department of Primary Industries in respect to the above matter.

Comment has been sought from DPI Water, Fisheries, Agriculture & Lands. Any further referrals to DPI can be sent by email to landuse.enquiries@dpi.nsw.gov.au. DPI Agriculture and Lands have no comment. DPI Fisheries and Water comments are provided below.

Comment by DPI Fisheries

DPI Fisheries has reviewed the RTS and have the following comments to include in the DPI reply:

1. There is a commitment to incorporate the use of ERSED controls to the standard outlined in the "*Managing Urban Stormwater: Soils and Construction*" publication. However, this is an industrial mine site and these standards are unlikely to cope with the challenges presented by heavy rainfall across the mine site. While the design principles underpinning these guidelines are probably universally appropriate, the performance standards for an industrial mine site need to be significantly higher. The Environment Protection Authority should ensure that a high level of sediment and erosion control is incorporated into this proposal.
2. The design criteria for ERSED controls has been based on a 5 day 85th percentile rainfall event of 44 mm. According to advice provided by the Environment Protection Authority a rainfall event of 44mm is approximately a 1 in 1 year 5-6 hour ARI event. Essentially this means that the erosion and sediment controls would be overwhelmed once every 12 months on average. This is unacceptably high given the importance and value of downstream

aquatic habitats (including the Batemans Marine Park). On page 24 the applicant states "…the proponent has committed to ensuring that there would be no controlled discharges to natural drainage from sediment basins during the life of the project". This is somewhat misleading as the adopted ERSED design rainfall event would result in frequent *uncontrolled discharge* to natural drainage at this site. Therefore, the value of 44mm is too low and does not adequately address the risk of sediment discharge to natural waterways during heavy rainfall events. DPI recommends that the ERSED design criteria should be based on a much greater rainfall event (such as 100mm/24 hours).

3. To ensure that ERSED controls are properly implemented and maintained, it is recommended that a Condition of Approval requiring regular periodic independent audits of sediment and erosion controls with reporting to EPA and DPI should be included.

For further information please contact Justin Gilligan, A/Manager, Batemans Bay Marine Park on 4476 0801, or at justin.gilligan@dpi.nsw.gov.au.

Comment by DPI Water

DPI Water has reviewed the Response to Submissions (RTS) document for the proposed modification to the Dargues Reef Gold Mine. Reference is initially made to DPI Water's response at the Environmental Assessment (EA) stage for this modification. Key comments and recommendations are provided below with further detailed comments in Attachment A.

Key Comments

- The RTS proposes the withdrawal of the use of cyanide for processing at the site and the enlargement of the Tailing Storage Facility that were proposed in the environmental assessment for this modification. The remaining key proposed activities include:
  - Extension of life of mine from December 2022 to December 2024.
  - Construction and use of the eastern waste rock emplacement
  - Construction and use of vehicle crossing over Spring Creek.
- DPI Water provided recommendations at the EA stage in relation to additional groundwater monitoring requirements and for a review of the groundwater model based on additional data. These recommendations are retained for the further revised project with further detail in Attachment A. The groundwater monitoring is recommended to be addressed as part of revision of the Water Management Plan, with relevant infrastructure installed prior to commencement of mining operations. Revision of the groundwater model is recommended prior to development of the Water Management Plan to adequately inform mitigating and management requirements, and to reduce uncertainty of predicted impacts. The proponent has not committed to this in the RTS, however it is considered necessary as the last model review in AGE (2013) was based on January 2013 water level data and the review indicated baseflow assessment was not possible until more data is collected.
- Continued periodic review of the groundwater model during mining operations to validate predictions against impacts and water take is critical and has been recognised by the proponent in the RTS.

- The proponent will be required to ensure adequate entitlement is held in the relevant water source for the increased groundwater take. As previously advised this would require licensing under the *Water Act 1912* which the proponent can apply for. The draft Water Sharing Plan for the South Coast Groundwater Source has been prepared which covers this project site, and upon commencement of this plan the proponent would be required to obtain entitlement from existing licence holders or via a Controlled Allocation Order under the *Water Management Act 2000*.
- The proposed development of erosion and sediment control plans in accordance with the guideline, "*Managing Urban Stormwater: Soils and Construction*" is supported, subject to the limitations outlined in the comments from DPI Fisheries.
- Construction of the proposed Spring Creek crossing is recommended to be carried out in accordance with DPI Water's *Guidelines for Controlled Activities on Waterfront Land*.

Recommended Conditions of Approval

- The proponent shall review and revise as necessary the Water Management Plan for the project. This plan must be developed in consultation with DPI Water.
- The proponent shall update the Groundwater Model with all available measured groundwater and surface water data prior to commencement of operations. This model update must be developed in consultation with DPI Water.

For further information please contact Tim Baker, Senior Water Regulation Officer (Dubbo Office) on 6841 7403 or at tim.baker@dpi.nsw.gov.au.

Yours sincerely

Mitchell Isaacs
Director, Planning Policy & Assessment Advice
17/12/2016

Attachment A

Dargues Reef Gold Project Modification 3 (MP 10_0054 Mod 3)
Comment on the Response to Submissions Report
DPI Water - Detailed Comments

Hydrogeological Comments

- A key concern of DPI Water's was that the Proponent was relying on statements that groundwater levels will recover within 10 years of the cessation of mining. This is not the situation stated in the modelling report (AGE 2013) which is, that the recovery will be from 10 to 20 years post mining. The matter is significant in that it relates to restoration of regional groundwater systems, creek baseflow and potentially migration of any contaminants emerging form the surface aspects of the mine operations.
- Any updating of the groundwater model will assist in better assessment of related impacts, and may assist in timely preparation of mitigating measures. As the project proposal is once again to revert to the form of the second Mod 3 proposal, then the groundwater model needs to be properly adjusted to take account of this including the planned changes to the Tailing Storage Facility (TSF), and the proposed altered mining timeframe.
- Section 4.4.4 of the Main EA and Appendix 7 proposed 6 additional shallow ("TSFWB01 to TSFWB06", 5-20 m deep) groundwater monitoring bores down-gradient of the modified Tailings Storage Facility (TSF). Sites are still to be selected but were generally illustrated in drawing number 801-139-A201-090 by Knight Piésold Consulting. The general detail of these bores is set out in accompanying drawing number 801-139-A201-091. It is noted that only 5 new bores are identifiable on the drawing.
- DPI's previous response considered that: "Additional monitoring in relation to potential acidic seepage during mining and then during recovery and post closure should also be implemented to ensure detection of adverse impacts into the mine in the first instance, then any impacts on Spring Creek." This matter is not considered to have been adequately addressed in the revised EA. There is also an operational in-mine risk posed by unexpected or excessive degradation of this waste source. A specifically engineered, monitoring bore located in the maximum groundwater drawdown envelope, and to be sampled with falling and rising groundwater pressures, was proposed for this purpose. This monitoring bore should be constructed and sampled as part of the regular groundwater monitoring regime.
- Some rationalisation of the groundwater monitoring bores e.g. DGWB11 to DGWB13 if not yet built, may be possible and it is recommended this be addressed by the proponent in a revised WMP. (This recommendation was developed in the light of extra monitoring required as a result of cyanide usage. However, under the present revised procedure the situation should revert to the original proposals.)

Hydrogeological Assessment Recommendations

The following key recommendations are reiterated from DPI Water's previous response:

1. The proponent present predictive groundwater modelling results for 5, 10, 15, 20 and 50 years post closure, and that:
   (i) these results be periodically updated whenever groundwater modelling is updated, and
   (ii) should any variations from predictions be noted when annual field monitoring results are compared to the modelling predictions, then these differences are to be addressed in a Revised Water Management Plan in consultation with DPI Water.
2. Sites for the six proposed additional shallow ("TSFWB01 to TSFWB06", 5-20 m deep) groundwater monitoring bores down-gradient of the modified Tailings Storage Facility (TSF) be identified.

3. The previously proposed monitoring bores DGWB11 to DGWB13 should be installed as originally proposed. This is because the potential need for rationalisation of these bores suggested in previous recommendations is no longer valid, because cyanide will no longer be used on site.
4. Additional monitoring in relation to potential acidic seepage during mining and then during recovery and post closure should also be implemented. A specifically engineered, monitoring bore should be constructed and located in the maximum groundwater drawdown envelope, and be sampled with falling and rising groundwater pressures as part of the regular groundwater monitoring regime.

End Attachment A