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4 September 2014

Mr Mike Young
Manager – Mining Projects
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Mike,

RE: Ninth Annual Report of the Independent Monitoring Panel for the Cowal Gold Project (October 2013)

In response to your letter dated 30 May 2014, please find below Barrick (Cowal) Limited's responses to the recommendations made by the Cowal Gold Mine (CGM) Independent Monitoring Panel (IMP) in their *Ninth Annual Report for the Cowal Gold Project – October 2013* (2013 IMP Report). In addition, a response is also provided regarding an additional issue raised by the IMP during their site visit in September 2013.

2013 IMP Recommendation 1: *CGM should complete the layout and planting of the Northern Waste Emplacement Trials as soon as possible and ensure that appropriate native species are included as direct seeded, tube stock, or fascine treatments.*

Barrick, with DnA Environmental, has finalised the design for the Northern Waste Rock Emplacement Trial and implementation of the trial (growth medium placement and planting) has now been completed. The design/layout of the trial is shown in Enclosure 1. The current draft of DnA Environmental's report, *Northern Waste Rock Emplacement Rehabilitation Trials (February 2014)*, details the specific native tree and shrub species recommended to be tested in the trial (and provides a list of species recommended as suitable for revegetation of the CGM waste rock emplacements).

Barrick sourced the recommended tubestock species for the trial from Jayfields Nursery (a nursery recommended by Greening Australia representatives). However it should be noted that given *Senna artemisiodes subsp.* was unavailable, DnA Environmental recommended *Acacia decora* (Western Golden Wattle) as a suitable replacement species for inclusion in the trial.

To minimise complexity of the trial, the revised trial design proposes to assess the performance of selected tubestock species only (i.e. the trial will no longer involve direct seeded plots) (DnA Environmental, 2014). Monitoring of the Northern Waste Rock Emplacement Trial will be conducted in accordance with the methodology detailed in DnA Environmental's (2014) draft report. A copy of DnA Environmental's draft report is provided in Enclosure 2.

Following planting of the Northern Waste Rock Emplacement Trial, approximately 12 hectares of the inner batters of the Perimeter Waste Rock Emplacement is proposed to be direct seeded in late 2014/early 2015 (subject to suitable conditions prevailing) using a seed mix developed from DnA Environmental's recommended revegetation species list for the waste rock emplacements. Monitoring of the direct seeded area will be conducted in accordance with the CGM's existing rehabilitation monitoring programme methodology to assess germination performance and plant growth development.
Regarding the use of fascine treatments at the CGM to assist with erosion control on final landform slopes. Based on the results of numerous rehabilitation trials conducted to date, the most successful

method in stabilising the slope and the surface cover materials was to apply a layer of rock mulch (approximately 300 millimetres [mm] deep) and topsoil on the waste rock surface which is cross-ripped along the contour of the slope to create a series of troughs and banks followed by the placement of hay and establishment of a cover crop. Other methods trialled, such as rock ribbons and belts or clumps of straw hay (which are similar concepts to fascine treatments), resulted in sedimentation above the rock ribbon and increased erosion downslope from the rock ribbon and suppressed vegetation growth on slopes including the straw hay treatment. Based on these results, these treatments were not pursued further at the CGM.

2013 IMP Recommendation 2: *CGM will need to plan well ahead for collection of native pasture hay and native shrub and tree seed or fascines sufficient to meet the needs of large-scale rehabilitation.*

In May 2014, Barrick engaged Greening Australia to assist with the development of a long-term seed and tubestock supply strategy for the CGM's on-site rehabilitation programme and for the CGM's offset revegetation and enhancement programme. Greening Australia's strategy would address propagation methods, site preparation and planting procedures and post-planting maintenance measures. Greening Australia's draft strategy is expected to be available for Barrick review by November 2014.

Barrick will continue to work with specialist local contractors for the long-term supply of locally produced native pasture hay for use in the CGM's rehabilitation programme.

2013 IMP Recommendation 3: *CGM should continue to monitor existing rehabilitation trials (and those planned for 2013) with a view to better define its approach to achieving sustainable, post-mining landscapes. Sampling and monitoring should be such as to provide more information on the benefits or otherwise of subsoil as a component of the root zone.*

Barrick will continue to monitor existing rehabilitation trials (and future rehabilitation trials) to determine appropriate depths of cover/plant growth media that assist to achieve CGM rehabilitation objectives.

With regard to the measures being undertaken to determine the benefits or otherwise of subsoil as a component of the plant root zone, Barrick has undertaken the following:

- engaged DnA Environmental to design a 'substrate profile' trial which aims to replicate the proposed cover systems for the top surfaces of the CGM waste rock emplacement and tailings storage facilities (of which subsoil is component);
- engaged DnA Environmental to undertake additional plant root growth assessments of tubestock planted directly in substrates including oxide waste, subsoil and topsoil in the Southern Waste Rock Emplacement Trial area to increase the sampling size and data set from the assessment conducted in November 2012; and
- engaged McKenzie Soil Management to characterise all soil resources (subsoil and topsoil) stockpiled at the CGM and develop measures to improve the suitability of the soil resources for re-use in the rehabilitation programme.

A summary of these measures is provided below.

Substrate Profile Trial

Given the CGM tailings storage facilities and waste rock emplacements are operational and dynamic landforms, the opportunity to implement rehabilitation trials on the top surfaces of these landforms is currently unavailable. The proposed substrate profile trial will involve placing large boxes (approximately 1 m x 1 m wide and 2 m high) proximal to the waste rock emplacements and tailings storage facilities which include various depths of substrate materials including tailings, waste rock, subsoil and topsoil. Select native tree and shrub species would be planted in the substrate treatments

and the trial monitored to assess plant growth, with root system development analysed at the completion of the trial.

Barrick is currently finalising the trial design with DnA Environmental and it is anticipated the waste rock emplacement component of the trial will commence (i.e. trial boxes filled and planted) in October 2014 (subject to suitable conditions). The finalised Substrate Profile Trial Design report will be provided to the IMP once complete.

Plant Root Growth Assessment

In November 2012, DnA Environmental excavated the soil around four (2 year old) tubestock planted in the Southern Waste Rock Emplacement Trial area to assess plant root growth. To increase the data set and confirm the results from the November 2012 assessment, additional plant root growth assessments of tubestock in the Southern Waste Rock Emplacement Trial area are proposed.

The additional assessments are proposed to be conducted in November 2014 (consistent with the timing of the previous assessments).

Characterisation of CGM Soil Resources

As described in the 2012 Annual Environmental Management Report (AEMR) and discussed with the IMP during their site visit in September 2013, Barrick engaged McKenzie Soil Management in 2012 to characterise the CGM's soil resources and assess their suitability as a plant growth medium. Given some subsoil and topsoil stockpiles were unable to be accessed during the 2012/2013 soil stockpile characterisation programme, McKenzie Soil Management will be engaged to sample and assess these remaining stocks and any new soil stocks stripped from disturbance areas associated with the CGM Extension Modification Project (once approved by the NSW Department of Planning and Environment). Characterisation of these soil stocks will inform the measures (if required) to improve the soil for plant growth and for use in the CGM's rehabilitation programme (e.g. rates of gypsum application).

Further to the above, Barrick will continue to liaise with McKenzie Soil Management regarding the detailed design of a soil amelioration farm to treat strongly sodic and dispersive soil stocks with gypsum.

2013 IMP Recommendation 4: *CGM should continue with its efforts to improve the process of dust sample preparation and metal analysis (including liaising with the University of Sydney where necessary) to ensure valid results.*

Barrick will continue to the conduct additional dust sampling and analysis procedures (as described in the 2012 AEMR and in Barrick's response to the IMP's 2012 Report) to improve the process of dust sample preparation and metals analysis. These measures will involve:

- continuing to collect depositional dust samples at three monthly intervals from five replicate dust gauges located immediately adjacent to existing dust gauges DG1, DG3, DG4, DG5 and DG13 for comparison to results from depositional dust samples collected monthly from the existing dust gauges;
- continuing to dispatch duplicate dust samples at random to two independent laboratories (ALS and NMI) for metals analysis to review/compare the procedures, sensitivities, sample size thresholds and results provided by each laboratory;
- continuing to engage Dr Cattle from the University of Sydney to analyse the results from the CGM's existing dust monitoring programme and the replicate dust gauge samples; and
- reporting all dust monitoring programme results in the CGM's AEMR.

Relevant Additional Issue Identified by the IMP from the 2012 AEMR and Mine Site Visit

The IMP noted the following regarding localised erosion:

> *The IMP observed localised areas of deep tunnel erosion due to incorrect placement and management of dispersive subsoils. The IMP notes the need to ensure that mine planners are trained to allocate and manage dispersive soil material appropriately. The IMP also notes that MineStar should always be used to guide soil placement.*

Barrick notes that the areas of localised deep tunnel erosion referred to by the IMP predominantly occurred on the inner batters of the Perimeter Waste Rock Emplacement and on the lower outer batters of the Southern Waste Rock Emplacement (at its southern and eastern extent) Erosion of these areas is considered to be a result of using dispersive soils during early preliminary rehabilitation activities at the CGM when optimal gypsum treatment rates used in rehabilitation works had not yet been determined. Furthermore, at that point in time, it was not yet standard practice to apply rock mulch to landform slopes to assist stabilisation of the slope and the rehabilitation cover materials.

As a part of planned rehabilitation works which commenced in late 2013, Barrick has since re-worked the southern and eastern lower outer batters of the Southern Waste Rock Emplacement and the lower batters of the Lake Protection Bund including backfilling and remediating the areas of erosion. Re-working/re-shaping of approximately 12 ha of the inner batters of the Perimeter Waste Rock Emplacement commenced in August 2014, with completion of rehabilitation activities (e.g. placement of cover materials and seeding) proposed to occur during late 2014 to early 2015 (subject to suitable conditions).

Consistent with Barrick's current cover system concept for the CGM's final landform slopes (which has been based on the results of various rehabilitation trials conducted to date) (Barrick, 2013), the following rehabilitation works have or will be completed for the areas described above:

- backfilling eroded areas with waste rock and re-shaping the area (using MineStar equipped fleet);
- applying gypsum at a rate of 10 tonne per hectare (t/ha) to oxide waste rock surfaces (prior to the application of surface cover materials);
- applying a layer of primary waste rock mulch approximately 300 millimetres (mm) deep;
- applying a layer of topsoil over the primary rock mulch approximately 250 mm deep;
- cross-ripping the materials along the contour of the slope (to create troughs and banks) with application of a further 10 t/ha of gypsum to the topsoil layer; and
- placing a layer of native pasture hay approximately 5 cm deep on the northern and western aspects of the landform slopes.

In addition to these rehabilitation works, Barrick staff will continue to use McKenzie Soil Management's (2013) *Cowal Gold Mine Soil Stockpile Characterisation Assessment* report (and any future addenda) to guide management and amelioration of the CGM's subsoil and topsoil resources.

As requested, a copy of the 2013 IMP Report has been placed on Barrick's website.

Please do not hesitate to contact me on 0400 235 735 should have any queries regarding the above.

Yours sincerely
BARRICK (COWAL) LIMITED

GARRY PEARSON
Environmental Manager

Copies:
Margaret Kirton (DP&E)
Emer. Prof. L. Clive. Bell (IMP)
Dr. Craig Miller (IMP)

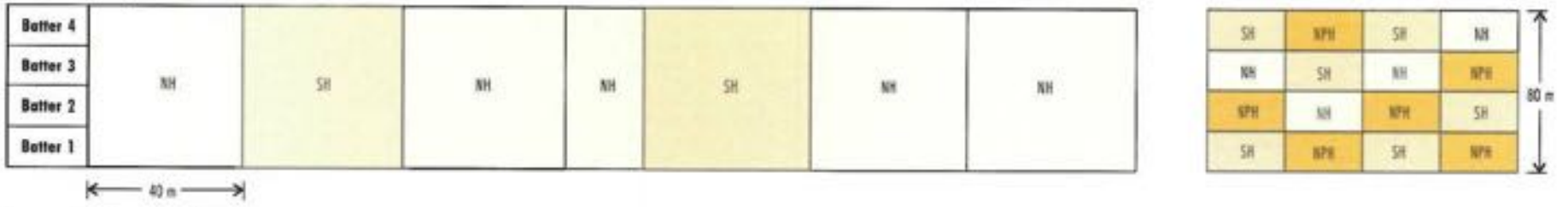
ENCLOSURE 1

LAYOUT OF NORTHERN WASTE ROCK EMPLACEMENT TRIAL

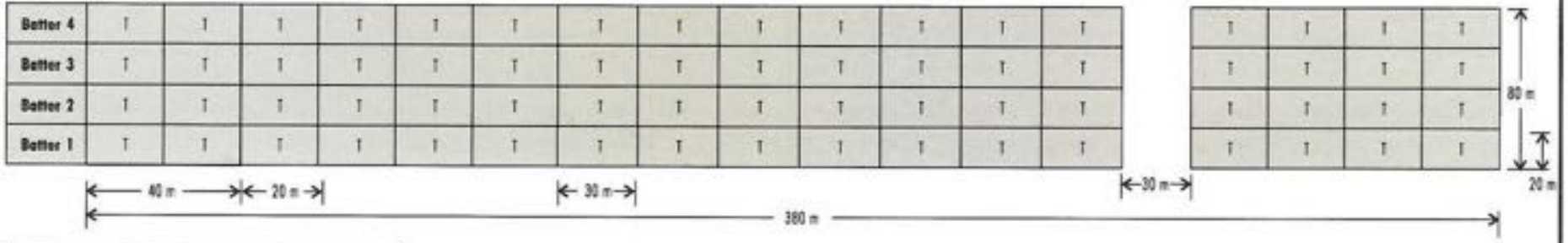
Base Layer - Rock Mulch

Layer 1 - Topsoil

Layer 2 - Hay Mulch



Layer 3 - Revegetation



	Legend
T	Tubestock including Eucalyptus and Acacia species
NPH	Native Pasture Hay - consistent layer approximately 50 mm deep
SH	Straw Hay - clumps approximately 100 mm deep and 1.5 m apart
NH	No Hay

After: BoA Environmental (2014)

Not to Scale

Northern Waste Rock Emplacement Rehabilitation Trial Design

BARRICK

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ENCLOSURE 2

DRAFT NORTHERN WASTE ROCK EMPLACEMENT REHABILITATION TRIALS REPORT

DNA ENVIRONMENTAL (2014)

Northern Waste Rock Emplacement Rehabilitation Trials

for

Cowal Gold Mine
Barrick (Cowal) Limited
February 2014

Prepared by DnA Environmental

Disclaimer

This is a report of work carried out by DnA Environmental, under contract and on behalf of Cowal Gold Mine, Barrick (Cowal) Limited and has been prepared according to the brief provided by the client. The information contained herein is complete and correct to the best of my knowledge. The representations, statements, opinions and advice, expressed or implied in this report are for the benefit of the Client only. The Content is produced in good faith but on the basis that DnA Environmental are not liable (whether by reason of negligence, lack of care or otherwise) to any person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any or all of the Content.

Signed:

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Acknowledgements

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