

Date : 31/10/2012 10:58:49 AM
From : "Apostol Alex"
To : "Butler Hamish"
Cc : "Fegan Warwick"
Subject : Barrick CGM Content Pit Water Management
Attachment : Croydon Pit water management.pdf;
Hi Hamish,

[CTPI 49-Sch4] would like to meet us to discuss the proposed management method for the Content Pit as per his attached letter. Would you be available on either Monday (5/11) or Tuesday (6/11) to discuss this issue with Barrick? If so, I would arrange for a teleconference.

Rgrds,
Alex

Alex Apostol
Senior Environmental Officer
Mining & Heavy Industry ♦ North Region
Department of Environment & Heritage Protection

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30 October 2012

Queensland Government
Department of Environment and Heritage Protection
PO Box 2316
Mt Isa 4825

Attention: Alex Apostle

Project: Croydon Gold Mine

Subject: Content Pit Water Management

Dear Alex,

As a follow up to our letter of 18 September, which was a response to the 2012 audit of Croydon Mine environmental compliance, the purpose of this letter is to advise on the status of Content Pit water management. Subject to your availability we would like to meet to discuss our proposed management methods, with a view to having works in place prior to the 2012/2013 wet season

In our previous letter we provided the context to the pit lake water management issues including water quality, pit inflows and set out the previous and proposed management control measures. The previous measures included:

- Diversion of all surface flow inputs to Content Pit outside of the bund wall – to ensure inputs are restricted to direct rainfall interception and groundwater
- Installation of drainage channels to minimise ponded surface waters – to minimise infiltration within the vicinity of the pit and consequently groundwater input
- Installation of automatic water level monitoring equipment to provide additional data for hydrological modelling

We advised that following the installation of the above measures with no practical measures available to further limit groundwater input, treatment options for water within Content Pit are currently being assessed. The strategy being to increase the pH to within ANZECC 2000 stock water quality guidelines, the only water quality parameter currently not within guideline limits.

Initial water treatment test work has now commenced which indicate that the lime equivalent to a pH of about 8.5 would require 18.5gm calcium hydroxide per cubic meter of Content Pit water (volume of Content Pit is approximately 195,000 m³). This estimate represents the theoretical lime demand and does not consider actual reactivity and availability within the pit and or possible reactions with pit walls and bottom sediments etc.

Sodium hydroxide would be the easiest and most reactive reagent to utilise for neutralisation. Hydrated lime would be next most efficient. However, both these reagents could lead to high pH values locally if not completely mixed or even if the reagent is slightly over-dosed. Limestone on the other hand is much less soluble and would buffer the pH to around 8.3 if overdosed. Therefore the risk of a high pH is negated with the use of limestone. A further benefit for the use of limestone is that excess limestone can be added to the pit lakes – the excess would accumulate within the pit lakes and would be available for neutralisation in the unlikely event of further acid generation.

Additional characterisation work is currently being performed to determine actual quantities of limestone that would be required (initial estimate is approximately seven (7) tonnes) using material from Ootan that would likely be used. At this stage, the preferred option is direct dosing of the lime material to the pit with natural mixing. Barrick has a contract in place with CTPI 49-Sch4 of SRK Consulting to provide technical review.

We can advise that this work is well advanced and therefore this is the logical trigger point to meet with the Department and seek endorsement of the preferred strategy.

Yours sincerely

BARRICK AUSTRALIA LIMITED

CTPI 49-Sch4

CTPI 49-Sch4

Permitting and Closure Manager

Date : 20/12/2012 3:05:31 PM

From : "Toe Jacob"

To : "Butler Hamish"

Cc : "Spena Silvana" , "Fegan Warwick" , "Apostol Alex"

Subject : Croydon Gold Mine ALD doc's

Attachment : Croydon Gold EA amend ALD_Dec 2012.doc;Croydon Gold EIS triggers_Dec 2021.doc;Croydon Gold CAC Memo_Dec 2012.doc;Croydon Gold CAC report_Dec 2012.doc;

Hamish,

Please see attached ALD recommendation doc's to go to CAC for the sitting on 4 January 2013. Silvana has reviewed and requested some amendments to the memo which I have made. If you're happy with this I will forward to PALM.

Cheers,

Jacob Toe
Senior Environmental Officer
Mining & Heavy Industry - North Region
Department of Environment & Heritage Protection

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GPO Box 937, Cairns QLD 4870

Checklist

Mining

Assessment level decision for amending an environmental authority

Environmental Protection Act 1994

EA NO:	MIN100401906
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An assessment level decision must be made within 10 business days from receipt of the amendment application (section 246). The first stage of this decision is to determine whether the amendment would significantly increase the level of environmental harm caused by the mining activity.

In making this determination, please follow the procedures given in the EPP Water, EPP Air, EPP Waste and EPP Noise, and consider the standard criteria and whether section 247A applies.

Please answer the following question:

In considering the following, would the amendment result in a significant increase in the level of environmental harm?

Consideration	no	n/a	yes > description of reasons
EPP Water	☒	☐	
EPP Air	☒	☐	
EPP Noise	☒	☐	
EPP Waste	☒	☐	
The Standard Criteria	☒	☐	
Does the amendment relate to mining activities in a wild river area?	☒	☐	
Any other issue	☒	☐	
Does section 247A of the EP Act apply? (tick relevant boxes below)			

Assessment level decision for amending an environmental authority

Does the application relate to a new relevant mining lease or mining claim (s247A(a))?	☒	☐	
Does the application relate to an addition to the surface area of a relevant mining lease (s247A(b))?	☒	☐	
Does the application relate to a change to the rehabilitation objectives that is likely to result in significantly different impacts on environmental values than the impacts previously authorised under the environmental authority (s247A(c))?	☒	☐	

Recommendation	
<p>After completing the list above, mark which of the following applies:</p> <p>(a) If all the 'No' boxes are marked, there are no concerns of the proposed amendment significantly increasing the level of environmental harm. Proceed to decide whether to grant or refuse the application..... ☒</p> <p>(b) If any of the 'Yes' boxes are marked, there are issues which are likely to significantly increase the level of environmental harm. Please proceed to determine whether an EIS is required for the proposed amendment..... ☐</p>	

Assessing Officer Name: Jacob Toe	Date: 19/12/2012
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Checklist

Mining

EIS trigger criteria

Environmental Protection Act 1994

EA NO:	MIN100401906
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For all non-code compliant applications for a level 1 mining project, the administering authority must decide whether an environmental impact statement (EIS) is required for the project (section 162).

In case of an amendment application, the administering authority must make an assessment level decision under section 246 and decide whether an EIS is required for the proposed amendment.

An EIS will be required if any of the following trigger criteria are met. If no criteria are triggered, this does not provide an exemption from having to prepare an EIS if the administering authority or DERM Minister considers that there may be a significant environmental impact, or there is a high level of uncertainty about the possible impacts, or there is a high level of public interest in the proposal.

For exploration permits or mineral development licences, the current policy is not to require an EIS.

For each question, indicate whether the answer is "yes" (column A), or "no" (column B).

Criteria	A Yes	B No
1. Will the application have a significant impact on <u>Category A</u> or <u>Category B</u> environmentally sensitive areas? (refer to sections 25 and 26 of the <i>Environmental Protection Regulation 2008</i>)	☐	☒
2. Will the application involve mining in a marine area?	☐	☒
3. Will the application involve mining less than 500 m landward from mean high water?	☐	☒
4. Will the application require the construction of more than 150 new dwelling units?	☐	☒
5. Will the application include an activity that would otherwise be an ERA with an aggregate environmental score of greater than 165?	☐	☒
6. Will the application involve the mining of more than 2 million tonnes of mineral or run of mine ore per year?	☐	☒
7. Will the application involve the abstraction of more than 2 million m ³ of water per year from natural surface or groundwater sources?	☐	☒
8. Will the application result in more than 25 ha remaining post mining in a non-beneficial land capability where an acceptable alternative is considered feasible?	☐	☒
9. Will the application involve any level 1 mining activity less than 2 km from town?	☐	☒
10. Will the application contain a regulated dam?	☐	☒
11. Will the application include mining for uranium or asbestos?	☐	☒
12. Will the application trigger a Commonwealth interest in matters of national environmental significance to the extent that an EIS would be required under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> ?	☐	☒

Checklist
EIS trigger criteria

13. Will the application include mining activities below the surface of a wild river high preservation area?	☐	☒
14. Will the application include mining activities under a nominated waterway in a wild river preservation area?	☐	☒

Recommendation
<p>After completing the list above, mark which of the following applies:</p> <p>(a) If there is a marked box in column A, an EIS is required (unless the application is for an extension to an existing project, and the incremental increase in potential environmental harm is not significant). Proceed through the non-code compliant assessment process with an EIS..... ☐</p> <p>(b) If all boxes in Column B are marked, an EIS is not required. Proceed through the non-code compliant application process without an EIS..... ☒</p>

<p>Assessing Officer Name: Jacob Toe Date: 19/12/2012</p>
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Memorandum

Enquiries
Telephone
Our reference

Jacob Toe
07 4222 5332
NOR/063909

19 December 2012

To: Coordinated Assessment Committee

Through: Hamish Butler, Team Leader Northern Region – Mining and Industry

From: Jacob Toe, Senior Environmental Officer

Subject: Assessment Level Decision – Croydon Gold Mine (L1 EA amendment application)

DECISION DUE: 4 January 2013

Background

Barrick (Kalgoorlie) Limited (Barrick) operate the Croydon Gold Mine (CGM) at Croydon in north-west Queensland. Mining activities are authorised under EA MIN100401906 (EA) on ML5248. Production ceased in 1990 and since that time various rehabilitation works have been undertaken. The mine consists of 4 open pits (Golden Butterfly pit, Golden Butterfly North pit, Content pit and Lady Isabella pit), 2 WRD's (Golden Butterfly WRD and Content WRD), water management structures (various diversion bunds and sediment ponds) and access roads/tracks. The EA does not currently authorise the release of contaminants to waters; however, releases are known to have occurred in the past and Barrick wish to obtain approval for future releases that may be required for site water management.

Summary

The Department of Environment and Heritage Protection (EHP) received an application for an EA amendment under section 240 of the *Environmental Protection Act 1994* from Barrick on 14 December 2012. This application requests authorisation to release contaminants to receiving waters during flow events from two open pits (Content and Lady Isabella) at the mine.

Barrick advise that this amendment is necessary to allow for authorised releases in response to above average rainfall as there are limited options for improving surface water management at CGM through further engineered structures (such as diversions).

During March 2011, an unauthorised release occurred from the Content pit to Belmore Creek. Subsequent analysis of water quality monitoring coupled with ecotoxicology (direct toxicity assessment) and sediment quality investigations in accordance with ANZECC (2000) methodology indicate no environmental harm resulted; this suggests that Barrick, under appropriate controls, would be able to manage future contaminant releases in a manner that effectively minimises impacts to receiving waters.

Barrick has been advised that approval to release contaminants from the mine to receiving waters would require imposition of release conditions including minimum flow, a minimum dilution factor, contaminant release limits and monitoring of water/sediment quality and aquatic fauna.

Legislation - *Environmental Protection Act 1994*

The *EP Act* requires the following considerations to be made for assessment of an EA amendment application.

Section 246 - Assessment level decision

The level of environmental harm caused by operations at the CGM is unlikely to increase as a result of the proposed EA amendment based on the following:

- The proposed activity has occurred (without authorisation) in the past and Barrick have been required to investigate the level of harm, determining that no significant impacts had occurred as a result.
- Contemporary EA contaminant release conditions would be imposed and if complied with, there should not be any additional impacts to receiving waters; furthermore, the ability to manage discharges to coincide with peak flow events in receiving waters should improve environmental outcomes.
- Whilst authorising releases is not the preferred management strategy, given management complications related to the sites legacy issues (mining has occurred in the area since the 1880's), release to waters in accordance with stringent controls is a reasonable management response.

Section 246 - EIS decision

An EIS is not required to assess potential impacts from this proposed activity, investigations on potential impacts have been undertaken previously and indicate the release of contaminants from site can be managed to sufficiently limit environmental harm.

Section 247A– Significant increase must be decided in particular cases

Not applicable.

Consideration of the standard criteria

The standard criteria have been considered in making this recommendation as follows:

(a) the principles of ecologically sustainable development as set out in the 'National Strategy for Ecologically Sustainable Development'; and

The guiding principles of ecologically sustainable development as set out in the 'National Strategy for Ecologically Sustainable Development' has been considered. The recommendation made under this assessment level decision and EIS decision has integrated the long and short-term economic, environmental, social and equity considerations.

(b) any applicable environmental protection policy; and

All EPP's have been considered during the assessment of this application; the EPP Water is directly applicable and consideration has been given to the environmental values of the area and management objectives in making this recommendation.

(c) any applicable Commonwealth, State or local government plans, standards, agreements or requirements; and

No relevant Commonwealth, State or local government plans, standards, agreements or requirements are relevant to the proposed EA amendments.

(d) any applicable environmental impact study, assessment or report; and

Not applicable.

(e) the character, resilience and values of the receiving environment; and

The proposed EA amendment is unlikely to increase the risk of environmental harm to the receiving environment (including groundwater, surface water, land and air); controls to limit impacts of contaminant release to receiving waters have been nominated and contemporary EA conditions will be imposed should the application be approved.

(f) all submissions made by the applicant and submitters; and

The application documents provided by Barrick have been considered.

(g) the best practice environmental management for activities under any relevant instrument, or proposed instrument, as follows—

- (i) an environmental authority;
- (ii) a transitional environmental program;
- (iii) an environmental protection order;
- (iv) a disposal permit;
- (v) a development approval; and

Controlled release of contaminants to waters is not best practice, but it appears to be the most suitable management strategy for the CGM.

(h) the financial implications of the requirements under an instrument, or proposed instrument, mentioned in paragraph (g) as they would relate to the type of activity or industry carried out, or proposed to be carried out, under the instrument; and

Not applicable.

(i) the public interest; and

Public interest relating to the proposed amendments to the EA have been considered, there are no adverse implications regarding public interest.

(j) any applicable site management plan; and

Not applicable.

(k) any relevant integrated environmental management system or proposed integrated environmental management system; and

Not applicable.

(l) any other matter prescribed under a regulation.

The Environmental Protection Regulation 2008 has been considered in making the recommendation for the assessment level decision and EIS decision. The recommended decisions are consistent with provisions of the EP Regulation.

Other

Not applicable.

Recommendation

It is recommended that the assessment level decision is **“significant environmental harm increase unlikely”**.

It is recommended that the EIS decision is **“no EIS required”**.

Jacob Toe

Published on DES Disclosure Log
RTI Act 2009

Coordinated Assessment Committee Report

This report is prepared by an assessment officer for consideration by the Coordinated Assessment Committee (CAC). Upon determining the next appropriate course of action, the Chair of the Committee completes the 'CAC Recommendation' section of the report and returns it to the assessment officer for action.

Date prepared: 19 December 2012

Project details

Permit No.: MIN100401906
Project No: NOR/063909
EPA Administering District: Cairns
EPA Region: North
Project Name: Croydon Gold Mine
Project type (may be more than one): Open cut gold mine
Applicant(s): Barrick (Kalgoorlie) Limited (Barrick)
Project location: Croydon, NW Queensland
Project Description: Proposed amendment to authorise controlled release of contaminants to receiving waters.
Permit Application type(s): Amendment to an environmental authority
Application date: 14 December 2102
Decision required: Assessment level decision (ALD) and EIS decision
Decision Due: 4 January 2013
Recommended Decision: Significant increase in environmental harm unlikely; no EIS required
Recommended Project Director: RSD Northern EPA
Assessing Officer: Jacob Toe

Additional processes required: (attach details where necessary)

- ☒ None
- ☐ Other applications received by EPA for project
- ☐ Referral Coordination under Integrated Planning Act 1997
- ☐ An EIS process under any Queensland Act
- ☐ A process under the State Development and Public Works Organisation Act 1971;
- ☐ Major works under the Marine Parks Act 1982;
- ☐ Commonwealth processes under the Environmental Protection and Biodiversity Conservation Act 1999.
- ☐ Other <details>

Special circumstances: (attach details where necessary)

- ☒ None
- ☐ Affects a sensitive area
- ☐ Involves a large number of individual decisions;
- ☐ Is likely to generate significant community concern;
- ☐ Needs policy change for approval;
- ☐ Applicant suitability;
- ☐ Involves a make or break issue;
- ☐ Involves significant issues with another State/Commonwealth Agency; and
- ☐ Another special circumstance which significantly elevates environmental, social or economic risks beyond those usual for this type of project.
- ☐ Other <details>

Indicate the level of impact or significance for each of the following EPA/QPWS interests: [if impact is indicated, notes must be included to describe how]

Biodiversity

- N/A Rare and threatened species and ecosystems
- N/A Vegetation clearing
- N/A Marine systems
- N/A Sustainable use of wildlife
- N/A Riparian buffer zones

Notes:

National and international

- N/A World heritage
- N/A RAMSAR listed wetlands
- N/A Migratory species
- N/A National estate
- N/A Commonwealth marine areas
- N/A Radioactive materials

Notes:

Resource allocation

- N/A Mining
- N/A Dredging
- N/A Occupancy of marine lands (marinas etc)
- N/A Commercial opportunities on national parks and marine parks
- N/A Allocation of public resources (e.g. physical and natural resources environmental capacity),
- N/A National competition policy

Notes:

Tenure Issues

- N/A Protected areas
- N/A Native title interests
- N/A Offshore jurisdiction
- N/A Commonwealth jurisdiction
- N/A Inter-State jurisdiction

Notes:

Water Issues

- Low Quality
- Low Discharges
- Low Stream flows (effects in ecology)
- N/A Waterways management
- N/A Hydrology
- Low Impacts on freshwater and marine systems
- Low Groundwater

Notes:

The proposed activity of releasing contaminants to surface waters has an inherent risk for causing harm to the receiving environment. However, it is considered unlikely that there would be an increased risk of environmental harm to the receiving environment should the amendment be authorised and the applicant achieve compliance with the standard contaminant release conditions (which would be imposed by EHP).

Noise Issues

- N/A Community noise
- N/A Transportation noise
- N/A Industrial noise
- N/A Ground vibration
- N/A Airblast overpressure

Notes:

Land Issues

- N/A Contaminated land
- N/A Acid sulphate soils
- N/A Erosion/stability
- N/A Landscapes
- N/A Effects on hydrology
- N/A Sustainable use
- N/A Clearing
- N/A Land use history
- N/A Compliance with planning schemes
- N/A Rehabilitation and subsequent use

Notes:

Air Issues

- N/A Air shed management
- N/A Pollution
- N/A Health
- N/A Nuisance
- N/A Ecological impacts

Notes:

Waste Issues

- N/A Solid waste
- N/A Liquid waste
- N/A Gaseous waste
- N/A Dredge spoil disposal
- N/A Energy
- N/A Best practice environmental management

Notes:

Heritage Issues

- N/A Aboriginal and Torres Strait Islander cultural sites
- N/A Historic buildings and locations
- N/A Designated landscape Area

Notes:

Coastal Issues

- N/A Erosion
- N/A Structures
- N/A Reclamation
- N/A Strategic planning

Notes:

Impacts on surrounds Issues

N/A Transportation
N/A visual impacts
N/A compatibility with surrounding uses and activities
N/A neighbours opinions
Notes:

Social issues

N/A Amenity
N/A displacement of use
N/A community views
N/A public safety
N/A politics/policy
Notes:

Pre-lodgement Advice:

The EHP project manager Alex Apostol has discussed this application and the issues leading to the lodgement of the application with Barrick in detail.

Other issues

None applicable.

General comments and additional information:

Please see the attached memo.

CAC Recommendation

CAC Recommendation:	
Project Director:	
Assessment Office:	
Project Risk Level:	
Signature of Chair:	Date:

- ☐ Please attach a contextual map showing the location of the proposed activity.
- ☒ If EIS decision to be made, attach EIS trigger checklists.
- ☐ If other decisions to be made by Agency attach CEDP decision risk table.