April 2015

Independent Environmental Audit

Cowal Gold Mine

Trevor Brown & Associates
APPLIED ENVIRONMENTAL MANAGEMENT CONSULTANTS

REPORT: CGM/REV1/JULY 2015

Independent Environmental Audit
Cowal Gold Mine Project
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by

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15 July 2015

Trevor Brown

Principal Environmental Consultant/Auditor

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Abbreviations

AEMR	Annual Environmental Management Report
Annual Return	Annual Return required under the EPL No.11912
Annual Review	Review required under Development Consent 14/98 condition 9.1(b)
BCA	Building Code of Australia
CEMCC	Community Environmental Monitoring and Consultative Committee
DEC	Department or Environment and Conservation
DECC	Department of Environment and Climate Change
DECCW	Department of Environment, Climate Change and Water
Department	Department of Planning and Infrastructure (now Department of Planning and Environment)
DII	Department of Industry and Investment
DITRIS	Department of Trade & Investment, Regional Infrastructure Services
Director-General	Director-General Department of Planning and Infrastructure, or delegate
DoP	Department of Planning
DP&E	Department of Planning and Environment (previously Department of Planning and Infrastructure until April 2014)
DP&I	Department of Planning and Infrastructure
DSC	Dam Safety Committee
EA	Environmental Assessment *Cowal Gold Mine Extension Modification* 12 Sep 2013,
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPL	Environmental Protection Licence
ML	Mining Lease
Mine Water	Water that accumulates within active mining areas and mine drainage
NEPM	National Environmental Protection Measure
Minister	Minister for Planning, or delegate
Mitigation	Activities associated with reducing the impacts of the project
MOP	Mining Operations Plan
NOW	New South Wales Office of Water
ROM	Run-of-Mine
SEE	Statement of Environmental Effects

Executive Summary

An independent environmental audit of the Cowal Gold Mine (CGM) was conducted between the 20 and 24 April 2015 by Trevor Brown Principal Environmental Management Auditor and Robert Drury of Trevor Brown & Associates, to assess the status of the CGM operations in accordance with the Development Consent 14/98 MOD 11 condition 9.2(a). The audit reviewed the status of compliance of the CGM operations from 1 May 2013 to 30 April 2015.

The CGM operated under Development Consent 14/98 MOD 10 until 22 July 2014 when Development Consent 14/98 MOD 11 was granted. The CGM operations have been undertaken under the MOD 11 conditions after 22 July 2014. This audit includes assessment of compliance of the CGM with the Development Consent 14/98 MOD 11 conditions between 22 July 2014 and 30 April 2015.

The audit was conducted generally in accordance with the Australian/New Zealand Standards AS/NZS ISO 19011:2002 - Guidelines for Quality and/or Environmental Management System Auditing.

The documentation and files held at the CGM site and interview/discussion with relevant site personnel provided the auditors with the required information and documentation for the verification of compliance of the CGM operations with the Development Consent 14/98 and other statutory environmental approvals.

Environmental Management Strategy

The Environmental Management Strategy satisfies the requirements of Development Consent 14/98 MOD 11 condition 9.1 approved by DP&E on the 28 November 2014 and provides a sound basis for the environmental management of the Cowal Gold Mine operations and associated activities. The Environmental Management Strategy is supported by a suite of specific environmental aspect management plans that have been implemented as approved for the project under the Development Consent conditions.

Rehabilitation

The Rehabilitation and Offset Management Plan (in conjunction with the requirements of the Land Management Plan and Mining Operations Plan) provide a basis for the rehabilitation of the CGM site. The application of the rehabilitation methods outlined in the management plans and MOP have been negatively affected on the CGM site due to the influence of the extreme weather conditions experienced (wet during 2010-2011 and dry in 2012-2015).

Rehabilitation trials on the CGM site to determine suitable substrates and procedures for the stabilisation and revegetation have exhibited variability of results of vegetative establishment on the blends of rock, subsoil, gypsum and mulches. The rehabilitation targets outlined in the MOP and reported in the AEMR were generally not met during the 2011 to 2015 due to the influence of the extreme weather conditions. The improvement in the rehabilitation of the Southern Waste Rock Emplacement noted during this 2015 audit, indicated that CGM was progressing towards conforming to the rehabilitation areal targets in the MOP.

Heritage Management

The Non-Indigenous Heritage Management Plan prepared for the CGM site provided for management of the 'Cowal West Homestead Complex' components (including the Shearing Shed). Demolition of the Homestead complex, as approved under Development Consent 14/98 MOD 9 March 2010 occurred during 2011-2012. Relocation of the re-construction of the Shearing Shed and reconstruction at the Lake Cowal Foundation Information Centre was completed in April 2013, with an official opening ceremony held on 19 April 2013.

The Indigenous Archaeology and Cultural Heritage Management Plan developed and implemented for the CGM provides adequate management and controls for the protection of Aboriginal interests in the MLA. Archaeological investigations and collection of artefacts prior to disturbance of any area of the CGM site have been conducted by Dr Colin Pardoe Consultant Archaeologist and Cultural Heritage Officers provided by Wiradjuri Condobolin Corporation. The surveys are conducted under Section 87 Permits and Section 90 Consents issued under the *National Parks and Wildlife Act*.

Flora and Fauna

The Flora and Fauna Management Plan prepared for the CGM is compliant with the requirements of Development Consent 14/98 MOD 10 condition 3.4 and Development Consent 14/98 MOD 11 condition 3.2, and provides an adequate basis for the management of flora and fauna on the project MLA and surrounding Barrick owned land. The implementation of the commitments in the Flora and Fauna Management Plan are supplemented by the commitments in the Compensatory Wetland Management Plan, Land Management Plan, Rehabilitation and Offset Management Plan, and Surface Water, Groundwater, Meteorological and Biological Monitoring Program. The monitoring program reports prepared under the Flora and Fauna Management Plan provide a comprehensive ongoing assessment of the status of flora, fauna, avifauna, fish and habitats of the CGM project development and demonstrate that the project has not had a measurable negative impact on the surrounding environment or its flora and fauna.

Compensatory Wetland

The Compensatory Wetland Management Plan provides a comprehensive management and monitoring regime that is providing detailed reports on the status of the accessible compensatory wetland areas. The surveys and reports on the flora and fauna in the declared areas are indicating that the removal of livestock from grazing in the compensatory wetland areas and the climatic influences (particularly the heavy rainfall years and flooding of the Lake Cowal area), have had a significant positive influence on the structure and composition of the lake foreshore communities.

Biodiversity Offset

Barrick have prepared and submitted the Biodiversity Offset Strategy and Biodiversity Offset Management Plan to DP&E following consultation with OEH. The calculation of the conservation bond and lodgement with DP&E (to satisfy Development Consent 14/98 MOD 11 condition 3.4(d)), requires approval of the proposed offset areas, Biodiversity Offset Strategy and Biodiversity Offset Management Plan by DP&E / OEH.

Erosion and Sediment Control

The erosion and sediment control strategies implemented under the Erosion and Sediment Control Plan have been implemented for the CGM project site and are considered to be effective in meeting the objectives of the Erosion and Sediment Control Plan, as demonstrated by the environmental performance indicators. The Erosion and Sediment Control Plan is generally consistent with requirements in *Managing Urban Stormwater: Soils and Construction (Volume 2E – Mines and Quarries) Manual* (EPA 2008) Appendix C.

Soil Stripping

The Soil Stripping Management Plan has been implemented and the separation of the topsoil and subsoil horizons stockpiles has occurred. Reuse of the topsoil and subsoil has occurred for rehabilitation trials and final constructed surfaces on the tailings storage facilities and waste rock emplacement areas. The Soil Stripping Management Plan and implementation are considered adequate and representative of mining best practice.

The topsoil stockpile database is updated as new mining stockpile information is obtained from estimates determined from the site activities. Aerial photography and surveying of the soil stockpiles is conducted to accurately record soil stockpile locations and volumes.

Land Management

The Land Management Plan prepared to satisfy MCoA 3.10(A)(i) provides the basis for the long term management of the disturbed areas of ML 1535 and collates many of the commitments in other plans that also have associated long term management and rehabilitation strategies / processes for the ML area (e.g. Flora and Fauna Management Plan, Remnant Vegetation Enhancement Program, Rehabilitation and Offset Management Plan, Compensatory Wetland Management Plan etc). The monitoring surveys conducted during 2014 and 2015 have shown the effects of the meteorological conditions (mainly associated with rainfall) on the diversity and establishment of species across the CGM site and surrounding Barrick owner land.

Water

The Water Management Plan prepared to satisfy Development Consent 14/98 conditions has provided an adequate program for the management of water and controlling the surface water quality from the disturbed areas of the CGM site. The water monitoring program has been conducted in accordance with the Surface Water, Groundwater, Meteorological and Biological Monitoring Programme and Erosion and Sediment Control Management Plan. The independent revision of surface water monitoring data (David McMahon of McMahon Earth Science - D M McMahon Pty Ltd) concluded that "*The results of the surface water monitoring reported for 2014 did not exhibit any trend that indicated a connection between the closed catchment of the CGM operations and Lake Cowal waters*" and the independent review of groundwater monitoring data *(*Coffey Geotechnics) concluded that *"The monitoring data did not exhibit results that indicated a connection between the closed catchment of the CGM operations and the waters of Lake Cowal."*

Hazardous Waste and Chemical Management

The Hazardous Waste and Chemical Management Plan provides the processes and procedures on site for the management of all hazardous chemicals transported to, stored on, used in the process plant, and hazardous wastes generated on site. The handling of fuels, oils, and chemicals on site is managed in accordance with the plans, audits and reporting required under Development Consent 14/98 condition 5.4, the CGM Emergency Response Management Plan and CGM Safety Management System. All mine wastes (i.e. waste rock, tailings, contaminated material) generated on site are managed under a waste management plan. Recyclable wastes and administrative/putrescible waste is managed under contract with JR Richards and Sons. The Hazardous Waste and Chemical Management Plan has been revised regularly to address the changes in CGM operations under the various Modifications to the Development Approval 14/98. The management procedures and protocols have resulted in best practice for any mine waste materials, chemicals transported to, stored and/or used on the CGM site.

Cyanide Management

The Cyanide Management Plan prepared to satisfy Development Consent 14/98 condition 5.3(b), and subsequent addenda prepared for the Plan were approved by DP&I. The management of cyanide at the CGM site and process plant is representative of best practice. CGM is a signatory to the **"***International Cyanide Management Code for the Manufacture, Transport, and Use of Cyanide in the Production of Gold***"** and regular third party audits of the site practices and record keeping have confirmed compliance with the requirements of the International Cyanide Management Code. Between May 2014 and April 2015 no cyanide results exceeded the 20mg CN_{WAD}/L or the maximum 30mg CN_{WAD}/L level. Donato Environmental Services reported on wildlife visitation to the tailings storage facilities and noted that no deaths attributable to cyanide in the TSF had

occurred between May 2014 and April 2015, and that the monitored cyanide concentrations were all below the level that would be expected to cause mortality.

Dust

The Dust Management Plan (2009) and Air Quality Management Plan were prepared to satisfy Development Consent 14/98 MOD 11. The dust management plans were implemented for the CGM operations and compliance with the impact assessment criteria was achieved at all residences and bird-breeding and native fauna areas. The dust data collected from the monitoring program is reviewed annually by Dr Stephen Cattle of University of Sydney. No complaints in relation to dust were received by CGM between May 2013 and May 2015.

Noise

The Noise Management Plan prepared to satisfy the requirements of Development Consent 14/98 MOD 10 condition 6.4(g) was implemented for the CGM operations until March 2015. The revised Noise Management Plan prepared to satisfy Development Consent 14/98 MOD 11 condition 6.4(e) and approved by DP&E on 5 March 2015 is now current for the CGM operations.

The implementation of the control strategies outlined in the Noise Management Plan have minimised noise emissions from the CGM and are considered to be best practice and effective as demonstrated by the noise monitoring data and environmental performance indicators.

Ongoing operational noise surveys have demonstrated that CGM is operating in compliance with the noise assessment criteria imposed in the Development Consent and EPL conditions, and commitments made in the Environmental Assessment. No operator attended noise monitoring results exceeded the noise assessment criteria between May 2014 and April 2015.

Blasting

The Blast Management Plan provides a sound basis for the control of noise and vibration impacts from the mining activities and the procedures and blast methodology conform to best practice as outlined in current regulatory guidelines. Blast overpressure and vibration monitoring has from January 2014 to April 2015 demonstrated compliance for all blasts conducted between Monday and Saturday with the criteria specified in the Development Consent/EPL/ML conditions. Non-compliance related to blast overpressure that exceeded the 95 dB(L) level on Sundays and Public Holidays on ten occasions between January 2014 and December 2015, were assessed as a result of ambient wind speed and direction (as determined by meteorological data assessed by The Saros Group). Other instances where the blast related events exceeded the 95 dB(L) criteria were described as due to local environmental factors, and were not able to be differentiated from background levels.

Independent Monitoring Panel

The Independent Monitoring Panel (IMP) Reports prepared annually have provided a useful third party review of the status of the CGM activities in relation to environment and rehabilitation issues. Barrick has responded to the IMP recommendations in a timely manner and has addressed the requirements within the subsequent 12 month IMP review period where practicable.

1. Introduction

1.1 Background

The Development Consent 14/98 granted on 22 July 2014 for the Cowal Gold Mine (CGM) requires an Independent Third Party Audit of compliance in accordance with the Development Consent 14/98 MOD 11 condition 9.2(a) – Independent Environmental Audit:

> *"By the end of July 2016, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:*
>
> - *be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;*
> - *include consultation with the relevant agencies, BSC and the CEMCC;*
> - *assess the environmental performance of the development and assess whether it is complying with the requirements in this consent and any other relevant approvals (such as environment protection licences and/or mining lease (including any assessment, plan or program required under this consent);*
> - *review the adequacy of any approved strategy, plan or program required under this consent or the abovementioned approvals; and*
> - *recommend measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under this consent."*

1.2 Scope of Work

The audit was conducted generally in accordance with the AS/NZS ISO 19011:2002 – *Guidelines for Quality and/or Environmental Management System Auditing.*

The CGM operated under Development Consent 14/98 MOD 10 until 22 July 2014 when Development Consent 14/98 MOD 11 was granted. The CGM operations have been undertaken under the MOD 11 conditions after that date. This audit has assessed compliance of the CGM with the Development Consent 14/98 MOD 11 conditions between July 2014 and April 2015.

The scope of work for the audit of the CGM included the following components:

- review of the implementation of the requirements of the development consent conditions, and other environmental licences and approvals with environmental conditions for the operation of the Cowal Gold Mine and process plant;
- conduct site inspections and review on-site documentation and monitoring data relevant to the independent environmental audit;
- hold discussions with project staff in relation to the development consent conditions and implementation of the requirements;
- assess compliance of the Cowal Gold Mine project with the development consent conditions and other environmental conditions; and
- prepare an Independent Environmental Audit Report providing assessment of compliance against the consent conditions.

This Independent Environmental Audit was commissioned by Barrick (Cowal) Pty Limited (Barrick) and conducted by Trevor Brown & Associates between 20 April and 24 May 2014.

1.3 Structure of the Report

The report has been prepared to provide comment on each condition of approval in a tabulated form, with additional discussion in the main text of the document where required on specific matters. The tabulated comments are attached for the Development Consent conditions, Environmental Protection Licence (EPL) conditions and Mining Lease (ML) environmental conditions, with discussion of the status of compliance provided where relevant:

Glossary
Executive Summary
Section 1 Introduction
Section 2 Project Status April 2015
Section 3 Consents, Approvals and Licences
Section 4 Environmental Management Assessment
Section 5 Conclusions
Attachment A Development Consent 14/98 Conditions of Approval
Attachment B Environment Protection Licence No. 11912 Conditions
Attachment C Mining Lease No. 1535 environmental conditions

1.4 Compliance Tables

This audit assessed the activities for compliance with the intent of the Development Consent Conditions of Approval, Environment Protection Licence and Mining Lease conditions via site inspections, document review and verification of relevant documentation related to the conditions of approval in Attachments A – C.

The compliance status is expressed in the Attachments to this report as:

Ranking	Compliance Status
Compliant	Implies compliance with the intent and/or requirement of the approval condition.
Compliant Ongoing	Implies compliance with the intent and/or requirement of the approval condition and ongoing requirement for implementation
Non-Compliant	The specific requirement of the consent condition was not met.
Administrative Non-compliance	A technical conformance with a condition of the consent that would not result in material harm to the environment.
Not Triggered	The condition had not been triggered because the activity had not been triggered.
Not Applicable	The requirement of the condition had not been triggered (e.g. complaint driven monitoring, land acquisition, etc) by the current activities.
Noted	No specific auditable requirement for the condition.

Any Non-compliance (if identified) other than an Administrative Non-compliance, will be subject to a risk assessment in accordance with the *Draft Guidelines – Independent Environmental Audits of Mining Projects* section 7.2 and reported in section 5 Conclusions of this audit report.

2. Cowal Gold Mine Project Development

Following receipt of the Development Consent Minister's Conditions of Approval for the Cowal Gold Mine on 26 February 1999 and preparation and approval of the required environmental management plans in accordance with the Development Consent conditions, with construction activities associated with the mine and process plant development commencing in January 2004. Commissioning of the process plant began in March 2006. Operation of the mine and process plant continued between 2004 and July 2014 generally in accordance with the development described in the documents *Environmental Impact Statement dated 13 March 1998* and approved Modification 1-10.

Cowal Gold Mine Pit

A study into the compatibility of the CGM with critical conservation values of Lake Cowal over the long-term was completed and reported in the Cowal Gold Project Environmental Impact Statement (EIS) (North Limited, 1998). A Commission of Inquiry was held in November 1998 into the environmental aspects of the CGM and related infrastructure.

Development Consent 14/98 for the CGM and Bland Creek Palaeochannel Borefield water supply pipeline was granted by the NSW Minister for Urban Affairs and Planning under Part 4 of the EP&A Act on 26 February 1999. Modifications and approvals for the following related infrastructure components for the CGM:

- Upgrade of the mine access road from West Wyalong to the CGM: Approval for the upgrade of the mine access road was granted by the Bland Shire Council on 21 April 1999 under Part 5 of the EP&A Act.
- Temora to Cowal 132 kV ETL: Approval for the ETL (Figure 1-2) was granted by the NSW Minister for Urban Affairs and Planning on 3 August 1999 under Part 5 of the EP&A Act.

- Modifications to Development Consent 14/98 occurred on 11 August 2003, 22 December 2003, 4 August 2004, 23 August 2006, 12 March 2008 (Mod 5), 11 February 2009 (Mod 7), 28 August 2009 (Mod 8), 10 March 2011 (Mod 6), 17 January 2011 (Mod 9) and 6 July 2011 (Mod 10).

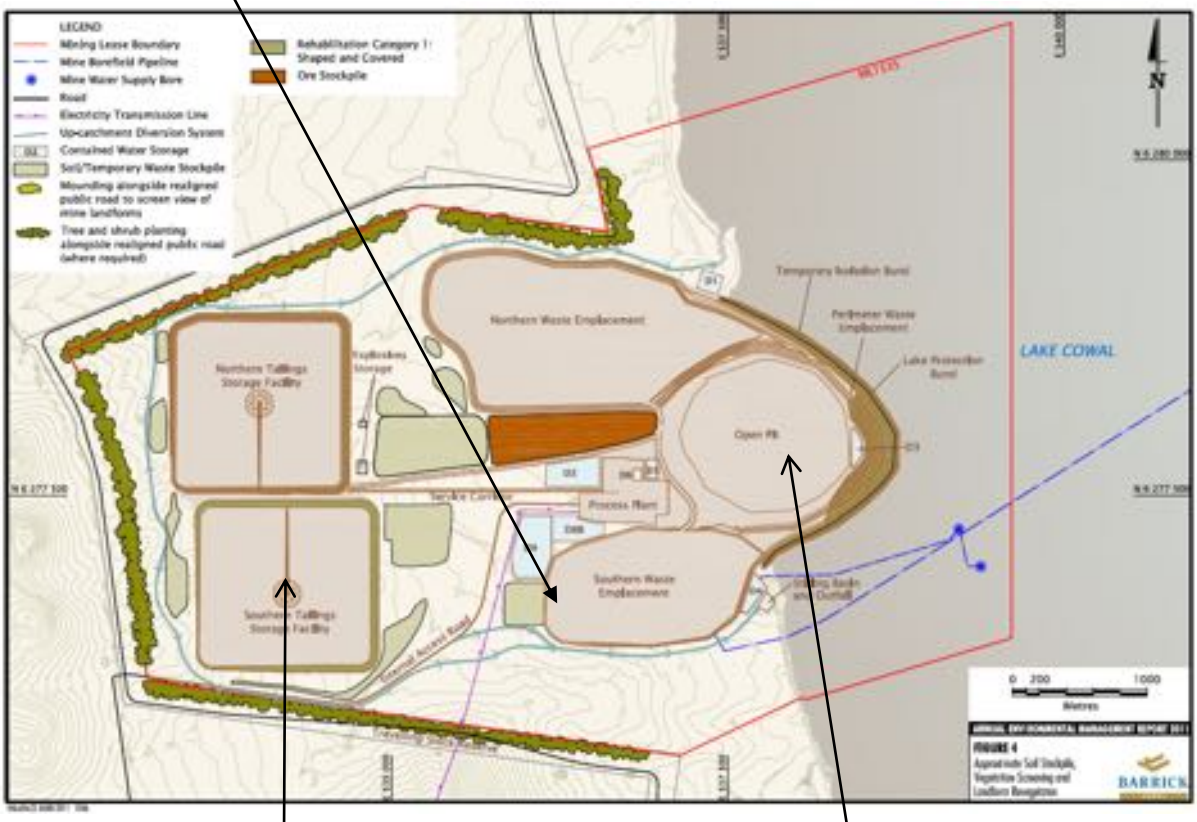
Development Consent 14/98 MOD 11, granted on 22 July 2014 for the Cowal Gold Mine Extension Modification, provides for the continuation of open cut mining operations at the CGM for an additional operational life of five years. The development related to Modification 11 would include:

- extension of the operational life of the CGM by an additional 5 years (i.e. until 2024);
- continued development of open pit mining operations including expansion of the extent and depth of the open pit;
- continued and expanded development of the existing Northern and Southern waste rock emplacements within ML 1535 for placement of mined waste rock over the life of the CGM, including:
  - raising the maximum design height of the northern waste rock emplacement to 308 metres (m) Australian Height Datum [AHD];
  - raising the maximum design height of the southern waste rock emplacement to 283 m AHD; and
  - extension of the northern waste rock emplacement to the west with an additional disturbance area of approximately 39 hectares (ha);
- no change to the existing process plant or its currently installed capacity to continue ore processing at a rate up to 7.5 million tonnes per annum (Mtpa)
- an increase in total gold production to approximately 3.8 million ounces;
- continued use of the existing tailings storage facilities for the deposition of tailings produced over the life of the CGM, including raising the maximum design height of:
  - the northern tailings storage facility (NTSF) to 248 m AHD; and
  - the southern tailings storage facility (STSF) to 255 m AHD;
- no change to the use of cyanide destruction in tailings prior to deposition in tailings storage facilities, with no change to the approved cyanide concentration limits in the aqueous component of the tailings slurry stream specified in the CGM Development Consent (DA 14/98);
- continued and expanded development of soil stockpiles, the relocation of existing soil stockpiles and stockpiling of mineralised material (i.e. potentially commercial ore) within ML 1535);
- no change to the use of currently approved external water supply sources (e.g. Bland Creek Palaeochannel Borefield, Eastern Saline Borefield and Lachlan River water entitlements via the Jemalong Irrigation Channel);
- additional internal surface water management infrastructure, including:
  - modification to the existing contained water storage D5 (including the potential for a new D5A water storage) to maintain the storage capacity of the existing D5; and
  - construction of a new water supply storage D10;
- construction of a new pump station on the eastern side of Lake Cowal to improve capacity/flow of the existing mine water supply pipeline, and associated diesel generator and access track; and
- a revised rehabilitation cover system to reflect the findings of ongoing rehabilitation trials at the CGM.

A Development Consent (DA 2011/64) for the operation of the eastern saline borefield was granted by the Forbes Shire Council on 20 December 2010. The approved operation of the eastern saline borefield includes the use of two production bores to extract water from the Cowra Formation aquifer and the use of existing associated works (including a pipeline) to deliver the saline water to the Bland Creek Palaeochannel Borefield pipeline.

Figure 1:Cowal Gold Mine Project – April 2015

Southern Waste Emplacement Area shaped for rehabilitation (April 2015)



CGM Tailings Storage Emplacements

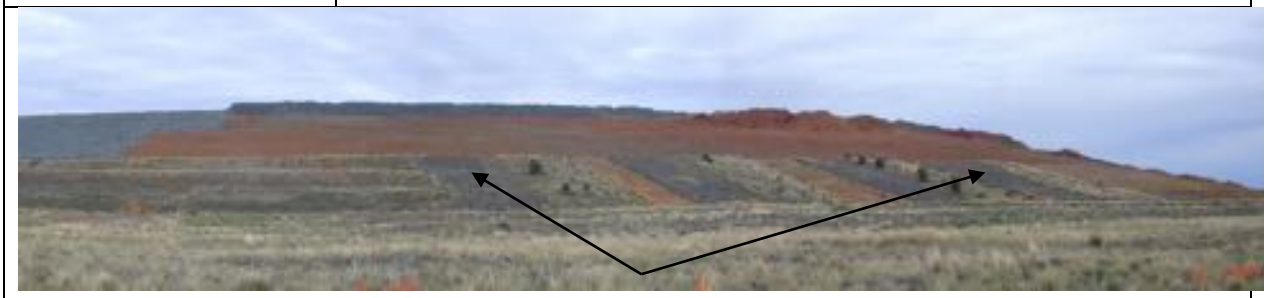
CGM Pit (viewed from the east)

2.1 Mine Development May 2014 to April 2015

The CGM development and operations between May 2014 and April 2015 occurred in accordance with Development Consent 14/98 MOD 10 between May 2014 and July 2014, and Development Consent 14/98 MOD 11 between 14 July 2014 and April 2015. The Development Consent 14/98 MOD 11 requirements were implemented when MOD 11 was granted with new or revised/updated environmental management plans prepared to satisfy the MOD 11 conditions for submission to DP&E.

Mine development that occurred between May 2014 and April 2015 are summarised in Table 2.1.

Table 2.1: CGM Construction during 2014 and April 2015

Infrastructure Component	Status May 2014 to April 2015
Northern Waste Rock Emplacement (NWRE)	No areal expansion of the NWRE occurred during 2014-2015. The NWE emplacement continued to receive waste from the open pit development. Some reclamation shaping of the outer northern batter occurred during 2014 with rehabilitation trials established on the batters.
 **The Northern Waste Rock Emplacement (NWRE) continued to receive waste rock - May 2014 to April 2015.**	
Southern Waste Rock Emplacement (SWRE)	The clearance of some Myall Woodland occurred on 10 February 2015 for the extension of the Southern Waste Rock Emplacement Area (SWEA). The SWEA has continued to receive waste rock with the north-west corner of the SWRE expanded into the area of the basal layer where the 'Cowal West' homestead stood until May 2012. The rehabilitation trials on the south side of the SWRE have continued. The vegetation establishment on the trial plots has continued to provide information on the most suitable rehabilitation procedure(s) for the waste rock emplacements, tailing storage facility bunds and other disturbed areas.
 **SWRE establishment of vegetative growth on the trial plots April 2015 and shaping topsoiling of the upper batters.**	
Perimeter Waste Emplacement (PWE)	No expansions occurred on the Perimeter Waste Emplacement between May 2014 and April 2015. Some rehabilitation of the batters above the Lake Protection Bund roadway has occurred with contouring, rock and topsoil placement and seed and tube stock planting.

Perimeter Waste Emplacement rehabilitation trials of the outside lifts (above the Lake Protection Bund)

Tailings Storage Facility (TSF) Sub-soil Stockpile	Waste rock mined from the open pit has been stockpiled for the tailings storage facility wall lift works and outer batter slope rehabilitation. Clay obtained from mine pit excavation works is stockpiled near the TSF Depot and used for future works. The STSF was being used for tailings placement in May 2014 and the fourth lift on the NSTF was constructed in May 2014. The process of TSF lifts continues on an annual basis.
Southern Tailings Storage Facility (STSF)	The fourth lift of the STSF has been operational from April 2013 with tailings deposition occurring until mid-2014. The Barrick Tailings Management Standard requires TSF walls to withstand a 1:5000 earthquake event. In order to achieve this standard rehabilitation material is being stripped from the TSF walls to allow rock buttressing to be placed.

STSF outer batter being strengthened with rock emplacement to meet the Barrick policy of tailings facility safety crietria for earthquake stability.

Northern Tailings Storage Facility (NTSF)	The NTSF was used in 2014 and 2015 while the new lift was constructed on STFS and the TSF walls were modified to meet the Barrick policy for tailings facility earthquake stability.

NTSF receiving tailings during 2014 to April 2015.

Temporary Isolation Bund and Lake Protection Bund	Lake Cowal waters reached the Temporary Isolation Bund in August 2010. The Temporary Isolation Bund was overtopped by the waters of Lake Cowal in mid-February 2012. The outer faces on either side of the Lake Protection Bund road were stabilised using the rock-topsoil method from late-2011 to the start of the heavy rains of early 2012. The establishment of natural vegetation on the Temporary Isolation Bund batters provided protection of the outer bund wall from wind / wave erosion resulting from the waters of Lake Cowal.

Temporary Isolation Bund - establishment of natural vegetation providing protection and stabilisation of the outer bund wall from the waters of Lake Cowal (when the lake bed was inundated).

Rehabilitation works adjacent to Pond D1	The south wall of Pond D1 was raised 0.50m in mid-February 2012 as a precaution against any further heavy rainfall events. Replicate rehabilitation trials adjacent to Pond D1 on the northern face of NWRE were constructed using the rock-topsoil method as a basis. The rehabilitation of this area was being progressed in May 2014 with re-contouring and placement of rock / topsoil surfacing prior to seeding.

Rehabilitation works adjacent to Pond D1 using rock-topsoil method for revegetation of the lower batters.

3. Consents, Approvals and Licenses

3.1 Development Consents and Project Approvals

Development Consent (DA14/98) was granted on 26 February 1999 under the *Environmental Planning and Assessment Act* 1979 (EP&A Act) with the Minister's Conditions of Approval (MCoA) for the CGM. Modifications to the Consent were granted in August 2003, December 2003, August 2004, August 2006, February 2008, February 2009, August 2009, March 2010 and January 2011 for the development of the CGM. Notice of Modification (MOD10, April 2011) allows for the operation of Stage 1 of the eastern saline bore-field.

Notice of Modification (MOD11, dated 22 July 2014) provided approval for:

- an increase in the area and depth of the existing open pit;
- consequential increases to the size of the waste rock emplacements,
- soil stockpiles and tailings storage facilities;
- an increase in the water storage capacity of the mine and the construction of a new pumping station on the eastern side of the lake to increase the pumping capacity of the water supply pipeline across the lake; and
- removing the life-of-mine water take cap (30,000ML) from the Bland Creek Paleochannel borefield and relying on the existing daily and annual caps.

Table 1: Modifications to Development Consent DA14/98

Date of Modification	Modification Summary
Modification 11 – 22 July 2014 (Part3A Mod)	Cowal Gold Mine Extension Modification.
Modification 10 - December 2010 (Part3A Mod)	The proposal involves using an increased proportion of saline water at the mine allowing for the operation of Stage 1 of the eastern saline bore-field.
Modification 9 - November 2010 (Part3A Mod)	The proposal involves amendment to the development consent to reflect the 15 year mine operation life described in the modified E42 Modification 6.
Modification 8 - June 2009 (Part4 Mod)	Expanding waste rock emplacements, introducing an alternative cyanide destruction method and developing a saline groundwater bore-field.
Modification 7 - January 2009 (Part4 Mod)	Expanding the surface dimensions of the open pit at the Cowal Gold Mine, with disposal of the spoil and waste rock on the existing emplacements.
Modification 6 - E42 Modification (Part3A Mod)	The E42 Modification included: - Expanding an open cut gold mine to extract an additional 23 Mt of ore for processing and supply to market; - increasing the mines maximum production rate from 6.9 to 7.5 million tonnes of ore a year; - expanding a range of associated infrastructure at the mine, such as the tailings dams, waste rock emplacement dumps, and stockpiles; and - extending the life of the mining operation by 2 years.

Modification 5 – Biological Monitoring and Fauna Reporting (Part 4 Mod)	The Applicant proposes to remove the requirement for baseline biological monitoring and change the reporting commitments for fauna deaths contained in the existing development consent.

Review of compliance with the Development Consent 14/98 conditions is summarised in Attachment A.

3.2 Environment Protection Licence

Barrick (Cowal) Pty Limited received an Environment Protection Licence (EPL) 11912 under section 55 of the *Protection of the Environment Operations Act 1997* for the CGM, on 23 December 2003.

Notices of Variation of the Licence between 2009 and 2013 dated 6 April 2009, 17 July 2009 and 24 June 2011 have been advised.

Table 3: Notices of Variation to Environment Protection Licence 11912

Date	EPL Notices of Variation
21 May 2014 1522063	c.L4.1 - Modify sensitive receptor noise monitoring locations, limits and frequency. c.M2.4 – Update to state that the monitoring at points 14, 15, 16, 17 and 18 - not required when the water level in Lake Cowal is at or below 204.5mAHD.
24 Jul 2014 1523564	The following variations have been made to the licence: • Update condition M7.1 to: - Include reference to blast monitor BM08.1; - Omit reference to blast monitor BM06; and - Replace blast monitor BM04 with BM04.1.
10 Oct 2014 1525458	The following variations have been made to the licence: • At monitoring point 3 (dust gauge DG5) and blast monitors identified as BM01, BM04.1, BM05 and BM09, monitoring is not required when the water level in Lake Cowal is below 204.5 metres Australian Height Datum and/or when the monitoring site is unable to be accessed safely. Monitoring is required to recommence when the outcome of a risk assessment determines a low or acceptable risk is associated with accessing the monitoring site
3 Feb 2015 1528088	The sensitive receptor noise monitoring locations have been reduced to acknowledge noise mitigation and acquisition rights assigned to three (3) receptors and noise limits at the remaining receptors have been reduced. The frequency of noise monitoring has been increased to quarterly as determined by the DP&E. The application of the noise limit criteria under certain meteorological conditions has been clarified.

Review of compliance with the EPL conditions is summarised in Attachment B.

3.3 Mining Leases

Mining Lease No.1535 was granted to Barrick under the *Mining Act 1992* on 13 June 2003.

A Mining Operations Plan (MOP) has been prepared by Barrick in accordance with the requirements of the Mining Lease 1535 condition 25, Development Consent 14/98 condition 2.1 and the latest NSW Department of Trade and Investment, Regional Infrastructure and Services – Division of Resources and Energy (DTIRIS-DRE) guideline - *ESG3: Mining Operations Plan (MOP) Guidelines, September 2013* (the MOP Guidelines). The MOP describes the proposed operational mining activities for the currently approved CGM for the period 30 April 2014 to 30 April 2016.

Compliance with the Mining Lease environmental conditions is summarised in Attachment C, Mining Lease Environmental Conditions Table.

3.4 Water Licences

Licence	Authority	Date Granted	Conditions
Production bore licence #70BL229248	NOW & EPA	14 Sep 2012	WAL31864 expires 14 Sep 2015
Production Bore Licenses #70BL229249, #70BL229250, #70BL229251	NOW & EPA	14 Sep 2012	WAL31864 expires 14 Sep 2015
Production bore licence #70BL232691 and #70BL232692	NOW & EPA	21 Mar 2014	WAL36615 expires 14 Sep 2015. Upper 10% (366 units. Upper Lachlan Alluvial Zone 7). Valid for the operation of three lake floor saline production bores when not inundated by Lake Cowal
DA No. 2011/0064 #70BL233321 & 70BL233323	NOW & FSC	20 Dec 2010	WAL36569 expires 9 Jun 2016. Valid for the operation of the eastern saline bore-field.
Pit dewatering bore licences #70BL230205 – #70BL230234 and newer.	NOW & EPA	6/1/2010	WAL36615 expires 14 Sep 2015. Upper 10% (366 units. Upper Lachlan Alluvial Zone 7). Replacement de-watering bore licenses as exchanged for decommissioned bores.
Supply Work Approval (prior Surface Licence 70SL090308)	NOW	12 Jan 2010	70W614805 expires 13 September 2015. Surface supply work Licence for TIB-LPB and buried borefield poly pipeline under Lake Cowal. 5-yearly renewals.
High Security Title WAL13749 DNR Reference 70AL603333	DoL	21 Dec 2006	Title for allocation from Regulated River Source.
General Security WAL13748 DNR Reference 70AL603332	DoL	21 Dec 2006	Title for allocation from Regulated River Source.

3.5 Section 87 Permits and Section 90 Consents

Section 87 Permits and Section 90 Consents under the *National Parks and Wildlife Act 1974* were granted for the Cowal Gold Mine development:

Approval	Authority	Date Granted	Conditions
Permit #1361 under section 87(1) of *the National Parks and Wildlife Act 1974*	DECCW (NPWS)	23 May 2002	Valid for period of exploration drilling on the lots covered by the permit.
Consent #1467 under section 90 of the NPW Act	DECCW (NPWS)	27 Nov 2002	These approvals lapse when the Minister acknowledges that satisfactory rehabilitation work has been completed under ML1535 or 18 years after completion of construction works, whichever occurs first.
Permit #1468 under section 87(1) of the NPW Act	DECCW (NPWS)	27 Oct 2003	
Consent #1680 under section 90 of the NPW Act	DECCW (NPWS)	28 Jul 2003	
Permit #1681 under section 87(1) of the NPW Act	DECCW (NPWS)	28 Jul 2003	

4. Review of Environmental Management

4.1 Environmental Management Strategy

[Development Consent 14/98 MOD 11 condition 9.1]

4.1.1 Environmental Management Strategy

The Environmental Management Strategy was prepared to satisfy the requirements of Development Consent 14/98 MOD 11 condition 9.1 and was approved on the 28 November 2014.

The objective of the EMS is to provide a strategic framework for environmental management at the CGM including all relevant approvals and environmental management plans (EMPs), strategies, and programs prepared for CGM.

The Environmental Management Strategy is relevant to all activities associated with operation of the CGM within Mining Lease (ML) 1535 and including operation of the Bland Creek Palaeochannel Borefield and Eastern Saline Borefield (and Eastern Pump Station).

The EMS is supported by the plans, strategies and programs required under the Development Consent for environmental management at the CGM:

- Environmental Management Strategy
- Noise Management Plan (incorporating a noise monitoring program);
- Blast Management Plan (including a blast monitoring program);
- Air Quality Management Plan (incorporating an air quality monitoring program);
- Rehabilitation Management Plan (including long term Rehabilitation Strategy);
- Biodiversity Offset Management Plan including Offset Strategy;
- Water Management Plan (including long-term water structures and final void management strategies);
- Surface Water, Groundwater, Meteorological and Biological Monitoring Program;
- Monitoring Program for Lake Protection Bund, Water Storages, Tailings Storage Facilities and Pit Walls;
- Soil Stripping Management Plan;
- Erosion and Sediment Control Management Plan;
- Land Management Plan;
- Flora and Fauna Management Plan;
- Threatened Species Management Protocol and Threatened Species Management Strategies;
- Compensatory Wetland Management Plan;
- Hazardous Waste and Chemical Management Plan;
- Transport of Hazardous Materials Study;
- Cyanide Management Plan;
- Emergency Response Plan/Pollution Incident Response Plan;
- Heritage Management Plan; and
- Indigenous Archaeology and Cultural Heritage Management Plan.

4.1.2 Conclusion

The Environmental Management Strategy satisfies the requirements of Development Consent 14/98 MOD 11 condition 9.1 approved by DP&E on the 28 November 2014 and provides a sound basis for the environmental management of the Cowal Gold Mine operations and associated activities. The Environmental Management Strategy is supported by a suite of specific environmental aspect management plans that have been implemented as approved for the project under the Development Consent conditions.

4.2 Rehabilitation

[Development Consent 14/98 MOD 10 condition 3.6(b)]
[Development Consent 14/98 MOD 11 condition 2.4(a) to (c)]

4.2.1 Rehabilitation Strategy

[Development Consent 14/98 MOD 11 condition 3.8]

A strategy for the long term land use of the MLA area on decommissioning of the mine site for appropriate land uses is required to be submitted to the DP&E by Year 7 of mining operations or five years before mine closure,

4.2.2 Rehabilitation and Offset Management Plan

[Development Consent 14/98 MOD 10 condition 3.6(b)]
[Development Consent 14/98 MOD 11 condition 2.4(c)]

A Rehabilitation and Offset Management Plan was prepared to satisfy Development Consent 14/98 MOD 10 condition 3.6(b) and submitted to the DoP on 30 July 2010 following consultation with DECCW, NoW and BSC. An addendum to the Rehabilitation and Offset Management Plan was submitted to DoP in December 2010 and comments were received by Barrick from DP&I on 14 August 2012. A further revision of the Rehabilitation and Offset Management Plan was then prepared in August 2013 and submitted to DP&I.

The Rehabilitation and Offset Management Plan addressed each of the requirements of Development Consent 14/98 MOD 10 condition 3.6(b) for the progressive rehabilitation of the mine site in accordance with the MOP and the requirements of *Guidelines to the Mining, Rehabilitation and Environmental Management Process* (MREMP Guidelines) (NSW Department of Primary Industries – Mineral Resources 2006), and conditions of ML 1535.

The Rehabilitation and Offset Management Plan also referenced rehabilitation requirements in the Land Management Plan, Erosion and Sediment Control Plan, Flora and Fauna Management Plan, Compensatory Wetland Management Plan, Remnant Vegetation Enhancement Program, Soil Stripping Management Plan, Bushfire Management Plan, where relevant.

[A Rehabilitation Management Plan to satisfy the requirements of Development Consent 14/98 MOD 11 condition 2.4(c) was prepared in consultation with DP&E, NOW, OEH, DPI, BSC and the CEMCC, and the Rehabilitation Management Plan revised taking account of the comments from the agencies. The revised document was re-submitted to DP&E on 13 April 2015].

Commitments in the Rehabilitation and Offset Management Plan 2013 are listed in Table 9.

Table 9: Rehabilitation and Offset Management Plan Commitments

Section /Page No.	Rehabilitation and Offset Management Plan Commitments	Comments
s.3.2.3 / p17	Access tracks outside disturbance areas will be kept to a minimum and be positioned so that they do not cause any unnecessary damage to the land. Temporary access tracks will be ripped, topsoiled and revegetated as soon as possible after they are no longer required for mining operations.	No new access tracks were constructed outside the MLA disturbance area during 2014 and April 2015.

Section /Page No.	Rehabilitation and Offset Management Plan Commitments	Comments
s.3.2.4 / p17	Riparian vegetation will be used to stabilise the permanent drainage lines. 	Management of drainage lines and establishment of riparian vegetation was carried out on southern and northern low flow drainage structures within the MLA and on an ephemeral drainage line on Barrick owned land. The success of the riparian vegetation establishment has been affected by the predominance of dry weather in the Lake Cowal area. Some riparian vegetation establishment has occurred on the temporary lake protection bund since 2011 following the regular rainfall during 2011 and 2013. The vegetated areas of the Lake Cowal foreshore and the temporary lake protection bund have developed well established cover including *Pilularia novae-hollandiae* (Austral Pillwort) and *Eucalyptus camaldulensis* (River Red Gum). 
s.3.2.6 / p18	Management of soil stockpiles has been established in the Soil Stripping Management Plan (SSMP) (Barrick, 2003) and includes soil handling measures that optimise retention of soil characteristics (in terms of nutrients and micro-organisms) favourable to plant growth.	Management of topsoil stockpiles occurs in accordance with the Soil Stripping Management Plan (refer to section4.2 Soil Stripping Management Plan).
s.3.2.7 / p19	A Vegetation Clearance Protocol (VCP) developed in the FFMP includes pre-clearance surveys. The Pre-clearance surveys include a preliminary habitat assessment the results of which will be utilised to determine appropriate secondary habitat assessment activities.	The Vegetation Clearance Protocol developed under the approved Flora and Fauna Management Plan is activated prior to occurrence of any vegetation clearance of any undisturbed area on the CGM site. The pre-clearance surveys are conducted as required by suitably qualified consultants. The Vegetation Clearance Protocol was used on 10 February 2015 for clearance of some Myall Woodland to accommodate the extension of the Southern Waste Storage Area.
s.3.2.9 / p20	Progressive rehabilitation of waste emplacements and the tailings storage facilities will be undertaken to reduce the contrast between the CGM landforms and the surrounding landscape.	Rehabilitation trials have occurred on the batters of the tailings storage facilities and waste emplacements to determine suitable rehabilitation methodology and to reduce contrast with the surrounding landscape.

Section /Page No.	Rehabilitation and Offset Management Plan Commitments	Comments
 **Progressive rehabilitation - Southern Waste Rock Emplacement batters.**		
s.3.2.9 /p20	Earth mounds will be constructed on sections of the western and northern boundaries of ML 1535 to break up continuous views from Lake Cowal Road. These earth mounds and vegetation screen areas surrounding ML 1535 (including along Lake Cowal Road) are to be planted with endemic plants compatible with the existing surrounding vegetation.	Earth mounds constructed on the western and northern boundaries of ML 1535 to break up continuous views of the CGM from Lake Cowal Road were planted with endemic species in 2005. The vegetative cover on the mounds was not successful because of the dry conditions. Plantings around the mounds have been established and are providing some screening of the mine areas from Lake Cowal Road.
 **View of CGM from Lake Cowal Road (April 2015) with vegetative establishment around the mounds and along the boundary of the CGM MLA.**		
s.3.2.12/ p21	Weeds will be managed at the CGM in accordance with measures described in the Land Management Plan (LMP).	Weed management within the ML 1535 and other Barrick owned lands is undertaken in accordance with measures described in the Land Management Plan (LMP).
s.3.2.12 / p22	Barrick will undertake pest control activities at the CGM in accordance with the procedures detailed in the FFMP and LMP.	Pest control activities described in the Land Management Plan are implemented across the Barrick owned properties.
s.3.2.13/ p23	Grazing and cropping activities will be excluded within ML 1535 during operation and rehabilitation of the CGM.	No grazing and cropping activities have occurred within ML 1535 since commencement of the mine development in 2004.
s.3.2.15/p23	Bushfire management strategies and procedures will be implemented during the life of the mine.	Bushfire preventative measure programs outlined in the Bushfire Management Plan (BMP) are actioned by the CGM Emergency Response Officers to manage fire hazard risk.
s.3.3 /p24	Performance criteria for mine site rehabilitation have been developed to reflect the measures for mine site rehabilitation.	Rehabilitation and Biodiversity Offset Management Plan Table 2 provides the performance criteria for mine site rehabilitation (refer to section 4.6.2 of this report).
s.3.4 /p25	A rehabilitation monitoring program has been developed to monitor the effectiveness of the short, medium and long-term measures and progress against	DnA Environmental conduct an annual rehabilitation monitoring program and have developed completion criteria that comply with and are consistent with, conditions of approval and management plans, and aligns with the

<table>
<tr><th>Section /Page No.</th><th>Rehabilitation and Offset Management Plan Commitments</th><th>Comments</th></tr>
<tr><td></td><td>the performance and completion criteria (MCoA 3.6(d)(v)).</td><td>DTIRIS-MR (2011) Rehabilitation and Environmental Management Plan (REMP) Guidelines Consultation Draft V2.0 June 2010.
Monitoring occurs during spring to capture an accurate representation of species present in the area.
A summary of the results of this monitoring is provided in the AEMR.</td></tr>
<tr><td>s.3.4.2/p27</td><td>Monitoring will be conducted to determine whether vegetation planted within the New Lake Foreshore is establishing and to determine the need for any maintenance and/or contingency measures (such as the requirement for supplementary plantings, erosion control or weed and pest control).</td><td>Annual monitoring of the Lake Foreshore areas is conducted by DnA Environmental to assess establishment of the lake foreshore vegetation.

Results of the surveys are reported in the AEMR section 3.7.3.2 – Performance Outcomes</td></tr>
<tr><td>s.3.4.2/p27</td><td>Visual monitoring of revegetated landforms will be conducted to confirm that vegetation is establishing and to determine the need for any maintenance and/or contingency measures (such as supplementary plantings, erosion control and weed control).</td><td>Visual monitoring of revegetated landforms is conducted by DnA Environmental to assess establishment of the vegetation planted.
A comprehensive Weed Survey was conducted by ngh environmental in March 2015.
Results of the surveys are reported in the AEMR section 3.7.3.2.</td></tr>
<tr><td>s.3.4.2/p 27</td><td>The effectiveness of the erosion and sediment control systems and the performance of those systems will be reported against the objectives contained in the ESCMP.</td><td>Performance of erosion and sediment control measures against the requirements in the Erosion and Sediment Control Management Plan is undertaken following significant, high intensity rainfall events. The performance of erosion and sediment control structures is reported in the AEMR section 3.2.</td></tr>
<tr><td>s.3.4.2/p28</td><td>Monitoring of fauna usage of the New Lake Foreshore, waste emplacements, Tailings Storage Facilities and the Compensatory Wetland will be conducted in accordance with the FFMP and CWMP.</td><td>Twice daily monitoring of fauna usage of the tailings storage facilities (TSF) has been undertaken since the commissioning of the TSF in April 2006. Six-monthly reporting on fauna usage of the TSFs is conducted by Donato Environmental Services and the reports are appended to the AEMR section 3.8.3.</td></tr>
<tr><td></td><td>Offset Areas</td><td></td></tr>
<tr><td>S4.1.1/p29</td><td>Locations of the northern and the southern offset areas are within the following properties owned by Barrick:

Northern Offset Area
• 8/753097; and
• 1/530299.
Southern Offset Area
• 19/753083; and
• 18/753083.</td><td>Proposed Offset Areas including the Cowal Gold Mine Extension (yet to be approved and long term protection arrangement agreed with DP&E) are:
<table>
<tr><th>Offset Management Area</th><th>Minimum Size</th></tr>
<tr><td>Southern Offset Enhancement Area</td><td>110 ha</td></tr>
<tr><td>Southern Offset Area Extension</td><td>230 ha</td></tr>
<tr><td>(Northern Offset Revegetation Area)</td><td>100 ha</td></tr>
<tr><td>Total</td><td>440 ha</td></tr>
</table></td></tr>
<tr><td>s.4.3.1/p34</td><td>Within Offset Enhancement Areas the following revegetation activities will occur:</td><td>Existing fences around the offset areas are maintained by Barrick.</td></tr>
</table>

Section /Page No.	Rehabilitation and Offset Management Plan Commitments	Comments
	• revegetation of unnecessary access tracks; • selective planting in other cleared areas where natural regeneration is not occurring. Annual inspections will identify areas within the Offset Enhancement Areas which will benefit from selective plantings.	No access tracks within the offset areas have required revegetation. Any other work commitments related to the offset areas are on hold, awaiting a response from DP&E in relation to the VPA for the long term protection of the biodiversity offset areas submitted to DP&I on 28 April 2014.and approval of the proposed offset areas.
s.4.3.1/ p35	Measures and procedures will be implemented to facilitate the natural regeneration of Myall Woodland remnant vegetation within the northern offset area of the Offset Enhancement Areas.	Measures and work commitments related to the proposed offset areas are on hold, awaiting a decision on the Voluntary Planning Agreement (VPA) by DP&E. Pest control activities within the offset areas have been conducted in accordance with the Land Management Plan. Fox baiting has been undertaken within the offset areas in accordance with the Land Management Plan and Flora and Fauna Management Plan.
s.4.3.4/ p40	Barrick will undertake pest control operations within the offset areas in accordance with the Land Management Plan and Flora and Fauna Management Plan.	
s.4.3.5/p41	Grazing and cropping activities will be excluded within the offset areas.	Grazing and cropping have been excluded from the proposed Cowal Gold Mine offset areas. Measures and work commitments related to the proposed offset areas are on hold, awaiting a decision on the Voluntary Planning Agreement (VPA) by DP&E. .
s.4.4/p42 (Table 8)	From Spring 2012, the performance of the offset areas will be measured against the following performance criteria: • Selective revegetation undertaken within Offset Revegetation Area and Offset Enhancement Areas. • Weed control and feral pest measures are effective. • Grazing and cropping activities excluded within the offset areas and perimeter fencing maintained. • Access to the offset areas restricted to authorised personnel and perimeter fencing maintained. • Bushfire management undertaken in accordance with the BMP.	Performance measure monitoring related to the proposed offset areas are on hold, awaiting a decision on the Voluntary Planning Agreement (VPA) by DP&E. Existing fences have been maintained. Weed control and feral pest monitoring has been conducted.
s.4.5.2/p44	Visual monitoring will be conducted regularly to evaluate the effectiveness of the implemented measures and determine the need for additional measures.	Visual monitoring of the proposed offset areas has been conducted by DnA Environmental. Other work commitments related to the proposed offset areas are on hold, awaiting a decision on the Voluntary Planning Agreement (VPA) by DP&E.
s.4.5.3/p44	Permanent photo-points will be established within the offset areas to monitor the change in the offset areas over time. The method for photographic monitoring	Permanent photo points have been established by DnA Environmental and are reported on in the annual biological monitoring reports.

Section /Page No.	Rehabilitation and Offset Management Plan Commitments	Comments
	described below reflects the NPWS (2003) *Conservation Management Note 9 – Photographic Monitoring.*	
s.4.5.4/p45	A number of permanent flora survey quadrats (20 x 20 m) will be established in the offset areas and at control sites to obtain quantitative data on plant species diversity and abundance. The control sites will serve as a reference point against which the performance of the offset areas can be assessed.	Permanent flora quadrats have been established by DnA Environmental and are reported on in the annual biological monitoring reports.
s.4.7/p46	In accordance with Consent Condition 3.6(b), by the end of December 2011, Barrick will make suitable arrangements to provide appropriate long-term security for the offset areas to the satisfaction of the Director-General of the DoP. Options proposed to provide appropriate long-term security for the offset areas include: • a Voluntary Conservation Agreement; or • a Property Vegetation Plan; or • rezoning and/or re-conditioning of relevant landholdings to reflect conservation purposes in consultation with the BSC.	Barrick proposed a Voluntary Conservation Agreement (VCA) and consulted with the OEH in relation to the development of a VCA. The VCA was not agreed to by OEH. Barrick prepared a Voluntary Planning Agreement (VPA) for the Offset areas that was submitted to DP&I on 28 April 2014. Commitments related to the proposed offset areas are on hold, awaiting a decision on the Voluntary Planning Agreement (VPA) by DP&E.
s.9/p51	An AEMR will be prepared in accordance with the requirements of Consent Condition 9.2 and I&I NSW (Minerals and Petroleum) requirements (Condition of Authority 26) (Section 2.1) and submitted to the Director-General.	Annual Environmental Management Reports (AEMR) have been prepared by CGM and rehabilitation aspects are reported in section 5.

The rehabilitation of the Cowal Gold Mine disturbed areas is occurring in accordance with the Rehabilitation and Offset Management Plan prepared for Development Consent 14/98 MOD 10 condition 3.6(b).

4.2.3 Rehabilitation Performance Criteria

The performance criteria for mine site rehabilitation are provided in the Rehabilitation and Offset Management Plan section 3.2, Table 2. The performance criteria have been developed to reflect the measures for mine site rehabilitation. The mine site rehabilitation will be measured against these performance criteria:

- Progressive rehabilitation has been undertaken within ML 1535.
- Selective revegetation has been undertaken within and outside disturbance areas.
- Measures have been undertaken to protect vegetation and soil outside disturbance areas (e.g. control of erosion and sedimentation, use of tree guards, supplementary plantings to replace losses, weed and feral animal control, limiting vehicular access).
- Planted riparian vegetation along permanent drainage lines is establishing and stabilisation methods (e.g. meshing, hydro-mulching) along permanent drainage lines are effective.
- Measures adopted for the CGM to manage salinity are effective.
- Soil stockpile management and soil replacement have been undertaken in accordance with the SSMP.
- Pre-clearance surveys have been undertaken (as required) in accordance with the VCP.
- Impacts on terrestrial and aquatic fauna managed in accordance with the FFMP and CWMP.

- Maintenance of the vegetation screens (e.g. addition and replacement of plants where required) has been undertaken on sections of the western and northern boundaries of ML 1535 to break up continuous views from Lake Cowal Road.
- Seed has been collected at the time of vegetation clearance activities.
- Habitat features (i.e. hollows, openings, cracks and/or loose bark) have been salvaged at the time of vegetation clearance activities.
- Weed control and feral pest measures are effective.
- Grazing and cropping activities excluded within ML 1535 and perimeter fencing maintained.
- Access to site restricted to authorised personnel and perimeter fencing maintained.
- Bushfire management has been undertaken in accordance with the BMP.

4.2.4 Rehabilitation Trials

[Minister's Condition of Approval 2.4(b)]

Following discussions with DI&I (Minerals) on 2 July 2010 and the comments of the Independent Monitoring Panel, Barrick established replicate trials to determine the most suitable rehabilitation procedure(s) for the waste rock emplacements, tailing storage facility bunds and other disturbed areas. Decisions on the optimal blend of rock, subsoil, gypsum and mulches have occurred in consultation with the relevant authorities to determine the long term rehabilitation procedures for the CGM.

Rehabilitation of completed areas on the northern and southern waste rock emplacement areas commenced in the 2013 to April 2015 period, with reshaping and placement of topsoil, rock, gypsum application and mulch, prior to seeding and some tube-stock planting. The rock and topsoil placement occurred in Q4 2014 and tube stock was planted on the perimeter waste rock emplacement areas. Observations on 21 April 2015 indicated a satisfactory establishment of the tube-stock had occurred on the majority of the completed batters of the waste rock emplacements.

Rehabilitation of overburden emplacement with shaping and vegetation establishment

DnA Environmental conducts an annual assessment of rehabilitation on the Lake Cowal Foreshore, Southern Waste Rock Emplacement, Northern Waste Rock Emplacement, and the Tailings Storage Facilities batters.

Rehabilitation for the 2012 to 2014 period, was undertaken in accordance with the Mining Operations Plan (refer to Table 10).

Table 4.2.4: Summary of Mine Lease Areas Disturbed/Rehabilitated

	Area Disturbed / Rehabilitated (hectares)*		
	2012	2013	**2014**
A MINE LEASE AREA			
A1 Mine Lease(s) Area	2,650	2650	2650
B DISTURBED AREAS			
B1 Infrastructure Area[1]	355	355	355
B2 Active Mining Area[2]	107	107	107
B3 Waste Emplacements[3]	342	342	342
B4 Tailings Emplacements	369	369	369
B5 Shaped Waste Emplacement[4]	96	96	127
ALL DISTURBED AREAS[5]	1,269	1295	1300
C REHABILITATION PROGRESS			
C1 Total Rehabilitated Area[6]	110	118	110
D REHABILITATION ON SLOPES			
D1 10 – 18 Degrees	110	118	110
D2 Greater than 18 Degrees	0	0	0
E SURFACE OF REHABILITATED LAND			
E1 Pasture and Grasses	151	151	151
E2 Native Forest/Ecosystems	38	38	67
E3 Plantations and Crops	0	0	0
E4 Other	0	0	0

*Actual figures in ha for January to December each year

1 Includes areas such as ore and soil stockpiles, contained water storages, processing plant and roads.
2 Open pit area.
3 Areas of waste emplacements yet to be shaped and rehabilitated.
4 Areas of waste emplacements that have been shaped and rehabilitated.
5 Includes any area disturbed by mining activities including the Total Rehabilitation Area presented in C1.
6 Any areas that have been rehabilitated including areas of waste emplacements and tailings storage facilities progressively shaped and rehabilitated.

Rehabilitation trials along the southern wall of the Southern Waste Emplacement Area and shaped batters

The batters of the Southern Waste Rock Emplacement have been shaped and prepared in readiness for revegetation. The shaped batters did not show erosion on the completed batters at the date of this audit (23 April 2015).

4.2.5 Rehabilitation Monitoring

The vegetation assemblages reported by DnA Environmental in the Annual Rehabilitation Monitoring Reports, were reported as representative of and consistent with the final land use and approved rehabilitation objectives for CGM:

- **Lake:** Woodlands occurring within the lake and lake foreshores (RL 205 – 220m);
- **Slopes**: Woodland occurring on flat to gently undulating slopes (RL 210 – 225);
- **Hills:** Woodlands occurring on low ridges, hills and elevated land (RL220 – 245m); and
- **Grass: Cleared native grasslands, occurring on flat to gently undulating slopes (RL 210 – 225m).**

Major rehabilitation areas assessed as part of the 2014 monitoring program included rehabilitation undertaken on the Lake Protection Bund. The monitoring methodologies used included a combination of Landscape Function Analyses (LFA), soil analyses and an assessment of ecosystem characteristics using an adaptation of the Biometric Model used in the Property Vegetation Planning Process. The DnA Environmental Report on Rehabilitation Monitoring, conducted in November 2014, presented the following conclusions:

4.2.5.1 Lake Foreshore

Since 2005 there has been an increasing trend in ecological function in the lake foreshore rehabilitation sites largely due to the increase in ground cover from plants that established as a result of natural regeneration from the topsoil stored seed bank and broadcasting of seed applied by hand. The inundation of Lake Cowal in 2010 resulted in a significant increase in floristic diversity. The remedial earthworks undertaken on the lake foreshore protection bund in 2012 addressed much of the gully erosion issues but may require application of protective ground covers or rock lining in some areas where sodic soils are particularly susceptible to wave action along the waterline.

The lake protection bund rehabilitation exhibiting an increase in ground cover from plants that established as a result of natural regeneration from the topsoil stored seed bank and broadcasting of seed applied by hand.

The ecological data obtained from the lake foreshore rehabilitation area indicated improved plant cover and increasing diversity and abundance of native species recorded.

In 2012 and 2014 the dry conditions had a negative impact of the perennial plant cover and in February 2014 most cover was provided by dead leaf litter.

Vegetative cover of the area between the temporary lake protection bund and access road at the base of the lake protection bund.

Overall there have been significant changes occurring on the new lake foreshore area since 2005. The sites have been progressing and are beginning to stabilise despite the extreme climatic conditions.

4.2.5.2 Tailings Storage Facility trials

Rehabilitation trials on the Northern Tailings Storage Facility (NTSF) and Southern Tailings Storage Facility (STSF) walls were commenced during 2009.

NTSF trial sites were ecologically functional grasslands and in 2013 were consistent with the stability, infiltration and nutrient recycling targets of the rehabilitation performance criteria, provided by the local native grassland communities. The STSF site continued to improve.

All rehabilitation sites had moderate to strongly alkaline soils with a high Cation Exchange Capacity (CEC), sodic characteristics and were low in organic matter and phosphorous. In conclusion, sites situated on both the NTSF and STSF performed relatively well and demonstrated significant increases in many ecological attributes over the 2012 to 2014 period.

Areas of the NTSF and STSF batters were disturbed during 2014-2015 resulting from the modifications of the TSF walls required under a Barrick International standard to construct tailings storage facility walls to withstand a 1 in 5000 year earthquake event. The finished, strengthened batter walls will be rehabilitated to the previous standard to meet the Barrick Cowal Gold Mine rehabilitation performance criteria.

4.2.5.3 Southern Offset Area

The two CGM Southern Offset monitoring sites were ecologically very stable due to the relatively high levels of litter largely derived from dead annual plants. The soils were very hard and crusted and there was little evidence of erosion and deposition. However the low levels of perennial vegetation combined with very hard crusted soils has resulted in sites with currently low infiltration and nutrient recycling capacity. The soil properties remained within the local levels but were both low in organic matter, and in monitoring site Offset-02 quadrant, the soils continue to be sodic.

4.2.5.4 Northern Offset Areas

The two Northern Offset monitoring sites demonstrated a decline in ecological function during 2013-14, however this reduction was also evident within the adjacent natural slope and floodplain communities, as a result of the dry conditions. Both Northern Offset sites fell within the stability, infiltration and nutrient recycling completion targets. The sites also demonstrated a decline in floristic diversity however site Offset-03 continued to have a higher diversity of native species than Offset-04.

4.2.5.5 Northern Waste Rock Emplacement Trials

A separate Northern Waste Rock Emplacement (NWRE) Rehabilitation Monitoring Report was prepared by DnA in February 2014. The NWRE was dominated by a heavy cover of dead leaf litter derived largely from an abundance of exotic annual plants such as *Lolium rigidum* that had established from the soil seed bank. The prolonged dry conditions did not allow a true representation of floristic diversity which would be different under more favourable seasonal conditions.

While there were anomalies in soil characteristics even within replicated soil/rock/mulch treatments, it appeared too early to tell which depth of topsoil and mulch application was more conducive to the establishment of a functional and diverse woodland community on NWRE that would be representative of the hills and ridges of the Lake Cowal area.

4.2.5.6 Southern Waste Emplacement Rehabilitation Trials

On the Southern Waste Rock Emplacement (SWRE) there was extensive colonisation by exotic annual grasses that provided critical protection and accelerated the accumulation of litter cover, which has greatly assisted the functional capacity of this area. Soil crusts had begun to develop and the soil had become more coherent within the litter patches. There was however a lack of tree and shrub species and associated structure and habitat requirements In terms of meeting completion targets.

The overall better performing sites on the SWRE in terms of ecological sustainability and similarity to the hill reference sites, were those with a topsoil application (i.e. rock mulch + topsoil or topsoil only treatments).

The treatments compared in these trials have shown that initial erosion control measures such as the light-medium application of native pasture hay or other mulch treatments in rows along the contour and/or shallow ripping along the contour may be required to provide immediate soil protective cover and additional erosion control features.

The SWRE trial has confirmed that protective soil cover treatment should be applied, regardless of its type or combination. Better longer term ecological outcomes and achievement of completion goals may be obtained when there is good plant establishment, especially of native perennial vegetation. The treatments compared in these trials have shown that good plant establishment can be achieved using topsoil, with or without a rock mulch underlay. Initial erosion control measures such as the light to medium application of native pasture hay or other mulch treatments in rows along the contour and/or shallow ripping along the contour, may be used to provide immediate soil protective cover.

Rehabilitation treatments with rock plus topsoil and with topsoil only, have reached more ecological targets compared to the other trial treatments. The success of these two treatments has largely been derived by the comparably good cover of native and exotic plants.

The DnA report concluded that:

> *"In order to reach completion targets associated with woodlands occurring on ridges and hills, there will be a requirement to ensure an appropriate diversity and density of trees and shrubs are incorporated into the planning and implementation of future rehabilitation areas."*

4.2.6 Conclusion

The Rehabilitation and Biodiversity Offset Management Plan (in conjunction with the requirements of the Land Management Plan and Mining Operations Plan) provide a basis for the rehabilitation of the CGM site. The application of the rehabilitation methods outlined in the management plans and MOP have been negatively

affected on the CGM site due to the influence of the extreme weather conditions experienced (wet during 2010-2011 and dry in 2012-2015).

Rehabilitation trials on the CGM site to determine suitable substrates and procedures for the stabilisation and revegetation have exhibited variability of results of vegetative establishment on the blends of rock, subsoil, gypsum and mulches. The rehabilitation targets outlined in the MOP and reported in the AEMR were generally not met during the 2011 to 2015 due to the influence of the extreme weather conditions. The improvement in the rehabilitation of the Southern Waste Rock Emplacement noted during this 2015 audit, indicated that CGM was progressing towards conforming with the rehabilitation targets in the MOP.

4.3 Heritage

[Development Consent 14/98 MOD 11 condition 3.1]

4.3.1 Heritage Management Plan

[Development Consent 14/98 MOD 11 condition 3.1(a)(i)]

The Heritage Management Plan for non-indigenous heritage was prepared to satisfy Development Consent 14/98 MOD 11 condition 3.1(a)(i) and approved by DIPNR in 2003. The Heritage Management Plan was reviewed in 2008 and no revision of the document was required.

Commitments in the non-indigenous Heritage Management Plan are listed in Table 4.

Table 4: Heritage Management Plan Commitments

Section/ Page No.	Heritage Management Plan Commitments	Comment
s.6.1.3/p16	Monitor dust within quarters and shed as excessive amounts of dust can adversely affect the heritage value of the shed.	This commitment is now not relevant as the quarters and shearing shed have been dismantled and the shearing shed reconstructed at the LCF site.
s.7/p16	Monitor the effectiveness of the management measures outlined in the HMP (*MCoA 8.6).*	The management of the heritage structures was undertaken in accordance with the HMP, prior to any demolition.
s.7/p16	Dust and blast monitoring programs will be conducted in accordance with AS: Use of explosives (1993). If blast monitoring exceeds standards, a structural assessment of the quarters and shed will be undertaken.	Dust and blast monitoring occurs as part of the CGM monitoring programs and the results assessed in relation to the prescribed levels.

Section/ Page No.	Heritage Management Plan Commitments	Comment
s.7/p18	The non-indigenous heritage program will be revised / updated as required.	The non-indigenous heritage program has been reviewed annually. Demolition of the 'Cowal West Homestead Complex' (CWHC) was approved via MOD 9 March 2010. Demolition of the homestead occurred during 2011-2012 and reconstruction of the Shearing Shed at the Lake Cowal Foundation Information Centre was completed in April 2013. An opening ceremony was held on 19 April 2013.

Shearers Shed (rear) reconstruction completed April 2013, at LCF Information Centre

Shearers Shed (front) reconstruction completed April 2013, at LCF Information Centre.

Reconstrtced shearing shed – internal structure with original components recovered from CGM site.

s.9/p20	An AEMR will be prepared in accordance with the requirements of the DMR (Condition of Authority - 26 Section 1) and Project Consent Condition 9.2 and submitted to the Director-General.	Annual Environmental Management Reports (AEMR) have been prepared by CGM in accordance with Development Consent 14/98 condition 9.2 and the heritage components are reported in section 3.14.

4.3.2 Indigenous Archaeology and Cultural Management Plan

[Development Consent 14/98 MOD 11 condition 3.1(a)(ii)]

The Indigenous Archaeology and Cultural Heritage Management Plan prepared to satisfy Development Consent 14/98 condition 3.3(ii) was approved by the Wiradjuri Condobolin Corporation (WCC) in writing on 11 November 2003. Approval was given under the auspices of the Wiradjuri Condobolin Culture and Heritage Company (WCC&HC), that was set up to manage the cultural and heritage component of the agreement between Barrick and the Wiradjuri Condobolin People.

The Indigenous Archaeology and Cultural Heritage Management Plan is reviewed and revised as necessary to reflect the *Due Diligence Code of Practice for Protection of Aboriginal Objects in NSW*, dated 24 February 2010.

The Indigenous Archaeology and Cultural Management Plan required under Development Consent 14/98 MOD 11 condition 3.1(a)(ii) was prepared and submitted to DP&E for approval on 2 April 2015.

The implementation of the management program for indigenous archaeology and cultural heritage has occurred in accordance with the Indigenous Archaeology and Cultural Heritage Management Plan:

- No new areas of disturbance occurred during May 2013 to May 2014.
- Meetings of the Cowal Project Co-ordinating Committee (CPCC) and the Employment Training and Business Committee (ETBC) were held between May 2013 and May 2015.

Commitments in the Indigenous Archaeology and Cultural Heritage Management Plan are listed in Table 5.

Table 5: Indigenous Archaeology and Cultural Heritage Management Plan Commitments

Section/ Page No.	Indigenous Archaeology and Cultural Heritage Management Plan Commitments	Comments
s.5.4/p20	In all areas within the ML, water pipeline and bore-field area where soil stripping occurs, the areas will be inspected after topsoil removal to identify "datable materials". Samples will be obtained and submitted for chronological analysis. ***(Permit 1682 Special Condition 11)***	All areas within the ML Area, water pipeline area and bore-field area where soil stripping occurred have been resurveyed in accordance with this Special Condition.
s.5.4/p20	A cultural heritage officer approved by the West Wyalong Aboriginal Land Council will be available on site to monitor construction earthworks. An archaeologist will also be on site to monitor the works to a depth at which Aboriginal objects are likely to exist.	Cultural Heritage Officers provided by Wiradjuri Condobolin Corporation, work under the Principal Consulting Archaeologist Dr Colin Pardoe and undertake surface archaeological surveys prior to any land disturbance or earthworks at the CGM mine lease site.
s.5.4/p21	If an Aboriginal object (other than human skeletal remains) of a type that has not been previously identified during the archaeological works is identified during construction earthworks, the Aboriginal object will be collected (Special Condition 1 in each of Permit 1468, Consent 1467, Permit 1681 and Consent 1681).	No archaeological surveys were carried out within the MLA between May 2014 to May 2015
s.5.4/p21	Construction works shall stop if human skeletal remains are identified and the DECC (OEH) will be immediately notified (Special Condition 1 of Permit 1468 and Special Condition 11 of Permit 1681).	No skeletal remains have been identified during the CGM development.
s.5.5/p21	With respect to all collected Aboriginal objects: • Sufficient data must be recorded to enable technological analysis to be undertaken for report purposes; • This information must form the basis of a master inventory; • Each object must be bagged and labelled detailing the specific area of collection.	Archaeological investigations and collection of artefacts from any areas proposed to be disturbed on the CGM site have been conducted under Section 87 and 90 Consents issued for the project by NPWS.

Section/ Page No.	Indigenous Archaeology and Cultural Heritage Management Plan Commitments	Comments
	(Special Condition 12 of Permit 1468 and Special Condition 4 of Permit 1681).	
S5.6/p21	All collected Aboriginal objects must be kept in a temporary Keeping Place on the project site until a permanent Keeping Place is available.	All collected Aboriginal objects are currently kept in a temporary Keeping Place on the CGM project site. A permanent Keeping Place has been constructed at the Condobolin Community Centre but the objects have not yet been transferred to the permanent site.
s.5.6/p21	Barrick must fund the design and construction of a Keeping Place for Aboriginal objects collected pursuant to Permit 1468, at a location to be agreed with the registered native title claimants for the ML Area and the West Wyalong Local Aboriginal Land Council. Barrick must reach an agreement with the registered native title claimants for the ML Area and the West Wyalong Local Aboriginal Land Council about the details and scope of the keeping place, but if no agreement is reached before the commencement of construction, the details and scope will be determined by DEC.(***Special (Consent 1467 condition 9***)	Barrick arranged for the design of a permanent Keeping Place for collected Aboriginal objects at the Condobolin Aboriginal Community Centre. Construction of the building is complete but the objects have not yet been transferred.
P23/s.5.7	The Project Consultant Archaeologist has the responsibility to conduct archaeological works authorised by Permit 1468 and Permit 1681 and monitor construction earthworks to a depth where Aboriginal objects are likely to exist; supervise the Barrick field coordinator, cultural heritage officers and Wiradjuri field assistants and provide technical supervision of the Keeping Place and advise Barrick with respect to all cultural heritage matters arising in relation to the Project (Project Consultant Archaeologist is the holder of Permit 1468 and Permit 1681).	Principal Consulting Archaeologist Dr Colin Pardoe manages and supervises archaeological investigations prior to any land disturbance or earthworks at the CGM mine lease site.
P26/s.6.3.1	Barrick agrees to brief the Wiradjuri Condobolin people (within 30 days of Board Approval for the project), on matters including cultural heritage issues; annually, on matters including cultural heritage issues; and on any cultural heritage issues that Barrick reasonably believes they should or might wish to be informed of as soon as possible after they arise, and on any material changes in the circumstances which were the subject of a briefing.	Barrick arranges and holds regular meeting with the Wiradjuri Condobolin people in relation to cultural heritage issues and project status. . Quarterly meetings between Barrick and the Cowal Project Co-ordinating Committee (CPCC) and the Employment Training and Business Committee (ETBC) are held each year, or as required.
P26/s.6.3.2	Barrick will produce a Mining Operations Plan to give a detailed account of the proposed mine site activities for a nominated term. It will include all mining and rehabilitation operations and relevant environmental controls and procedures necessary for compliance with lease conditions. It will include the relevant Aboriginal heritage	Barrick has prepared the following Mining Operations Plans for the CGM development: • MOP January 2011 to September 2012 • A Variation to the January 2011 to September 2012 MOP was requested 5 April 2012. • MOP October 2012 to January 2014. • MOP extension to January 2015.

Section/ Page No.	Indigenous Archaeology and Cultural Heritage Management Plan Commitments	Comments
	management measures to be included during works for the nominated MOP term.	• Draft MOP for April 2014 to April 2016 has been prepared
P23/s.6.3.2	The AEMR, issued by Barrick, will annually report relevant cultural heritage management measures conducted for the previous year. Proposed management measures for the next year will also be reported.	Annual Environmental Management Reports (AEMR) have been prepared by CGM in accordance with Development Consent 14/98 condition 9.2 and Aboriginal Heritage matters are reported in section 3.13, and European Heritage matters are reported in section 3.14.

4.3.3 Conclusion

The Non-Indigenous Heritage Management Plan prepared for the CGM site provided for management of the 'Cowal West Homestead Complex' components (including the Shearing Shed). Demolition of the Homestead complex, as approved under Development Consent 14/98 MOD 9 March 2010 occurred during 2011-2012. Relocation of the re-construction of the Shearing Shed and reconstruction at the Lake Cowal Foundation Information Centre was completed in April 2013, with an official opening ceremony held on 19 April 2013.

The Indigenous Archaeology and Cultural Heritage Management Plan developed and implemented for the CGM provides adequate management and controls for the protection of Aboriginal interests in the MLA. Archaeological investigations and collection of artefacts prior to disturbance of any area of the CGM site have been conducted by Dr Colin Pardoe Consultant Archaeologist and Cultural Heritage Officers provided by Wiradjuri Condobolin Corporation. The surveys are conducted under Section 87 Permits and Section 90 Consents issued under the *National Parks and Wildlife Act*.

4.4 Flora and Fauna Management

[Development Consent 14/98 MOD 10 condition 3.4]
[Development Consent 14/98 MOD 11 condition 3.2]

4.4.1 Flora and Fauna Management Plan

[Development Consent 14/98 MOD 11 condition 3.4]
[Development Consent 14/98 MOD 11 condition 3.2(b)]

A Flora and Fauna Management Plan prepared to satisfy Development Consent 14/98 MOD 10 condition 3.4 for the Cowal Gold Mine and was approved by DIPNR on 30 October 2003. The Flora and Fauna Management Plan was revised and approved by DoP in October 2008. An addendum to the Flora and Fauna Management Plan to reflect the revised monitoring programme for fish and aquatic invertebrates, to maintain consistency with the approved Surface Water, Groundwater, Meteorological and Biological Monitoring Program, was prepared in May 2010 and submitted to DoP.

The Flora and Fauna Management Plan, provides general management strategies for the conservation of wildlife values within ML1535 and the areas of Lake Cowal adjacent to the mine lease. The Threatened Species Management Protocol and Vegetation Clearance Protocol developed as part of the Flora and Fauna Management Plan have been implemented and the requirements of each Protocol completed prior to the disturbance of areas of the CGM.

A revised Flora and Fauna Management Plan to meet the requirements of Development Consent 14/98 MOD 11 condition 3.2(b) was being produced at the date of this audit for submission to DP&E by 30 May 2015.

Commitments included in the Flora and Fauna Management Plan are summarised in Table 6.

Table 6: Flora and Fauna Management Plan Commitments

Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
s.3 /p.13	In accordance with Consent Condition 3.4(a)(v) effective mechanisms shall be developed to keep fauna and avifauna away from the tailings storages.	The tailings storage facilities have been: • designed to minimise the area of open water in the tailings dams; • fenced to prevent terrestrial fauna from entering the areas; • designed to maintain the area non-conducive to the establishment of wildlife habitats; and • designed using of current best practice methods to deter avifauna.
s.3.1/p.14	The area of open water in the tailings dams will be minimised by maximising the dry density of tailings and the re-use of water from the tailings dams (North Limited, 1998a).	Deposition of tailings to the storage facilities is controlled to ensure minimal supernatant water collects around the decant towers near the centre of the storage facility. The supernatant water is returned to the process plant for reuse.
s.3.1.1/p.13	Tailings will be deposited peripherally via a spigotted ring main, allowing for the controlled development or "build-up" at any point around the surface of the tailings dams….. As a result, water contained within the tailings will drain towards a pond area and decant towers located in the centre of the storage, thus maximising the exposure of the tailings surface to air-drying and increasing in-storage tailings dry densities (North Limited, 1998a).	A spigotted ring main is used to deposit tailings peripherally providing for the controlled development or "build-up" of tailings ensuring water contained within the tailings drains towards the decant towers located in the centre of the storage facility.
 **Spigotted ring main deposits tailings around the periphery of the tailings storage facilities to minimise the area of open water to keep fauna and avifauna away from the tailings storages**.		
s.3.1.2/p14	Water re-use will be maximised using an under-drainage pipe network, decant towers, reclaim water dam and water return pipeline to the process water storage pond. The tailings ponds will be maintained as small as possible through continual recycling of water through the processing plant (North Limited, 1998a).	Recovery of supernatant water from the tailings storage facilities for reuse in the process plant is maximised to reduce the area of surface water and deter fauna and avifauna from using the tailings storages. Reuse of this supernatant water reduces the requirement for water to be extracted from the Paleochannel bore-field and/or the Lachlan River Regulated Water Source.
s.3.2/p.14	The tailings storages will be fenced to prevent medium to large terrestrial fauna (such as	The tailings storage facilities have been suitably fenced. Access to the tailings

Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
	Echidnas and Kangaroos), as well as amphibians from entering the area. The fence will be positioned around the surface perimeter of the tailings storage area. Gates (of similar design) will be constructed within the fence to provide mine personnel access to the tailings storage area.	storage facilities by CGM personnel is only gained through locked gates. Gates are closed immediately after entry or exit of vehicles.  **Fencing around the Tailings Storage Facilities to prevent terrestrial fauna entering the TSF.**
s.3.3/p.14	Rehabilitation of the tailings storage area during operations will be such that minimal habitat opportunities will be created for terrestrial fauna. Rehabilitation of the tailings storage batters will achieve soil stabilisation yet will not create desirable habitat.	The batters of the tailings storage facilities are being rehabilitated with native or introduced grass. The batters are maintained so that other vegetation (such as trees and shrubs) do not establish.
 **Rehabilitation of tailings storage facility batters with grass cover to stabilise the walls.**		
s.3.5/p.16	"Bird-Friten" ammunition (or similar) may be fired at the tailings storage facilities during high risk periods to scare birds away from the tailings storages. The "Bird-Friten" ammunition (or similar) may be fired at irregular intervals to reduce the chance of habituation (ie. fauna becoming accustomed to the noise, thereby reducing its effectiveness).	Use of cannons at the tailings storage facilities has been implemented, plus radar activated acoustic deterrents to scare birds off the tailings storage facilities.
s.4/p.16	In accordance with Consent Condition 3.4(a)(i), the tailings dams (also referred to in this Plan as tailings storages) will be monitored for daily and seasonal fauna usage, and to determine whether deaths or other effects or incidents are occurring.	Daily observational monitoring of the tailings storage facilities occurs for fauna and avifauna to identify any incidents or deaths within the tailings storage areas. Any impacts are recorded and recovery of any affected fauna occurs.
s.4.1/p.17	In the event that native fauna incidents or deaths are recorded, the Protocol for reporting any deaths or other incidents within ML 1535 will be initiated.	The protocol has been implemented. Recording of any fauna incidents on the tailings storage areas are reported to the Environment Manager and actions initiated in accordance with the Protocol.

<table>
<tr><th>Section/ Page No.</th><th>Flora and Fauna Management Plan Obligations</th><th>Comments</th></tr>
<tr><td>s.4.1/p.17</td><td>Usage of the tailings dams by bat fauna will also be monitored using an Anabat CF Zcaim echolocation call detector system, controlled by a call-activated switching device. The detector will be operated for two consecutive nights every month from dusk to dawn, with calls being recorded onto compact flash cards for later analysis from computer displays. Bat fauna monitoring data will be analysed monthly by a suitably qualified person(s) to determine bat fauna usage of the tailings dams</td><td>The Anabat system is operational and bat monitoring occurs twice a month with the results provided to Donato Environmental Services for review and interpretation reported in their six monthly reports on Seasonal wildlife use patterns of the Cowal Gold Mine tailings storage facility.</td></tr>
<tr><td>s.4.2/p.18</td><td>Usage of the tailings dams by fauna will be reported to the EPA and NPWS on a six monthly basis, unless otherwise directed by the Director-General. The monitoring results will also be reported in the AEMR in accordance with the requirements of Consent Condition 9.2.</td><td>Reports are provided to the OEH (EPA and NPWS) on a six monthly basis and a summary of all records are presented in the AEMR section 3.8.</td></tr>
<tr><td>s.5/p.18</td><td>In accordance with Consent Condition 3.4(a)(vi), Sections 5.1 and 5.2 include plans for the rescue and rehabilitation of wildlife that may become bogged/sick/trapped in the tailings dams or elsewhere within ML 1535.</td><td>Wildlife rescue and rehabilitation plans have been prepared in consultation with the Wildlife Information and Rescue Service (WIRES). The plans are provided in the Flora and Fauna Management Plan sections 5.1 and 5.2.</td></tr>
<tr><td>s.6.1/p.20</td><td>In the event that fauna incidents are observed, the following details and observations will be recorded:
• observer details (ie. name and position);
• date and time of inspection;
• type of species;
• number of individuals of each species;
• location; and
• any other details of the fauna incident.
<u>(Flora and Fauna Management Plan addendum June 2008)</u></td><td rowspan="2">Example of fauna incident report:<table><tr><th>Date/Time of Incident</th><th>14 February 2011</th></tr><tr><td>Location</td><td>TSF gravel access track.</td></tr><tr><td>Species and number of individuals</td><td>Dwyer’s Black-headed Snake (1)</td></tr><tr><td>Description of Incident</td><td>Deceased snake noted on the gravel track.</td></tr><tr><td>Outcome</td><td>Injuries consistent with vehicular impact.</td></tr></table>Records of all fauna deaths are prepared by CGM and reported in the AEMR section 3.8. No fauna deaths attributable to TSF cyanide were reported between May 2014 and April 2015.
Any fauna deaths attributable to cyanide would be reported within 24 hours to the DP&E, OEH, DTIRIS (DRE) and CEMCC.</td></tr>
<tr><td>s.6.2/p.20</td><td>In accordance with MCoA 3.4(a)(ii), any fauna deaths (except those attributable to physical trauma such as vehicle strike) will be reported to the DECC, DPI (Minerals) and CEMCC (refer to condition 8.7) and, in the case of fish, DPI (Fisheries) within 24 hours (or the next working day).
A record will be maintained of any wildlife deaths or other incidents and this record will be provided in the AEMR in accordance with MCoA 3.4(a)(ii).</td></tr>
<tr><td>s.6.3/p.20</td><td>In accordance with Consent Condition 3.4(a)(iii) fauna autopsy facilities will be provided to enable the cause of any fauna death(s) to be quickly determined.</td><td>Fauna autopsies are undertaken by the West Wyalong Veterinary Clinic as required. The dead fauna requiring autopsy are delivered to the West Wyalong Veterinary</td></tr>
</table>

Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
	Flora and Fauna Management Plan sections 6.3.1 to 6.3.2 provide an overview of the procedures and laboratory tests to be conducted on dead fauna recorded on the ML to be autopsied. (Flora and Fauna Management Plan addendum June 2008)	Clinic by CGM and a report is provided by the veterinarian on the cause of death. The fauna autopsy results are provided to the DTIRIS (DRE), OEH and NPWS, when they are made available by the West Wyalong Veterinary Clinic.
s.8/p.22	Contingency measures for reducing cyanide levels in the tailings dams in the event it is established that fauna deaths are occurring from cyanide in tailings dam water as required in MCoA 3.4(a)(iv).	Contingency measures for reducing cyanide levels in the tailings dams (as outlined in the Flora and Fauna Management Plan section 8.2) would be Implemented if required.
s.9.1/p.24	In accordance with MCoA 3.4(a)(vii) a number of methods will be utilised to protect, conserve and enhance wildlife values within ML 1535 and around Lake Cowal.	The Flora and Fauna Management Plan includes outlines of mitigation measures: • Compensatory Wetland Management Plan Initiatives (Section 9.2). • Remnant Vegetation Enhancement Programme (Section 9.3). • Rehabilitation of ML 1535 Disturbance Areas (Section 9.4). • Project Design (Section 9.5). • Threatened Species Management Protocol (Section 9.6). • Vegetation Clearance Protocol (Section 9.7). • Weed Management (Section 9.8). • Pest Control (Section 9.9).
s.9.3.1/p.26	In order to encourage the natural regeneration of native plant species, livestock will be controlled in the enhancement areas through fencing control and management, as outlined in the LMP.	Remnant vegetation and regeneration areas within ML 1535, on Barrick owned land and around Lake Cowal have been fenced to exclude livestock, as outlined in Land Management Plan section 4.3.

Northern Offset area fenced around Barrick owned land to exclude livestock (May 2014).

Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
 **Land adjacent to Northern Offset area (not Barrick owned land) where grazing is not excluded and regeneration of native species is reduced by livestock grazing.**		
s.9.3.2/p. 27	Remnant vegetation monitoring will be conducted within the enhancement areas…. A number of survey plots (50 x 20 m) will be established within each enhancement area to obtain quantitative data on species diversity and abundance…. The survey plots will be monitored annually (when not inundated) after Year 2 of mine operations. Control plots may also be established at sites outside of the enhancement areas to provide a reference point against which the management measures can be assessed.	Remnant vegetation monitoring has been conducted annually by DnA Environmental. Reports are prepared describing the status of the vegetation in each survey plot, with photo points established for each quadrat to record annual appearance.
s.9.4/p.29	Mine rehabilitation works will be undertaken progressively as construction activities and mining proceed, in accordance with a progressive rehabilitation program described in the MOP in accordance with requirements of the DMR (DMR, 2002).	Mine rehabilitation is being undertaken generally in accordance with the approved MOP, although meeting the targets for rehabilitation in the MOP has been affected due mainly to weather conditions. Rehabilitation status is reported in the AEMR section 4.6.
s.9.5.1/p.35	In accordance with Consent Condition 3.10(C), topsoil stockpiles within ML 1535 will not be located within any area of remnant Wilga woodland.	No soil stockpiles have been located in any area of Wilga Woodland.
s.9.5.2/p.35	Fences will be constructed within ML 1535 and around the ML boundary in accordance with MCoA 2.3 which requires the mine site to be secured…….	The CGM site has a security fence around the boundary of ML 1535, with internal fencing around the tailings storage facility areas.
s.9.6/p.36	The CGM Threatened Species Management Protocol was developed to minimise potential impacts of the Project on threatened flora and fauna species known and/or considered possible occurrences in the Project disturbance areas and/or immediate surrounds. The Threatened Species Management Protocol will be	Flora and Fauna Management Plan Appendix A - Threatened Species Management Protocol has been implemented as required for the protection of threatened species when they were encountered on the CGM site. The Threatened Species Management Protocol was not triggered between May 2014 and May 2015.

Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
	implemented in accordance with MCoA 3.4(b).	
s.9.7/p.38	In accordance with MCoA 3.4(a)(vii) which requires the protection of retained habitats within the ML area and 3.10(B) which requires the minimisation of the removal of trees and other vegetation from the mine site, a Vegetation Clearance Protocol (VCP) has been developed for the Project (Figure 8). All vegetation clearance activities required by the Project will be conducted in accordance with the VCP. The VCP will be implemented by suitably qualified person(s) and coordinated by the Environmental Manager.	In accordance with Development Consent 14/98 MOD 10 condition 3.10(B) and the Flora and Fauna Management Plan, the Vegetation Clearance Protocol is implemented where any vegetation clearance activities have been required within ML 1535. Vegetation clearance has been restricted to areas required for mine activities, buildings and paved surfaces, and areas necessary for fire control. The Vegetation Clearance Protocol is consistent with the JLWMP and LWMPLC to minimise vegetation clearance in the region.
s.9.8/p.42	Barrick will implement a weed monitoring program at the commencement of construction. Barrick owned land will be surveyed annually and follow up inspections will also be made of specific areas following the implementation of weed control measures. General weed management activities will be reported in the AEMR.	Annual weed surveys have been conducted by Carnegie Natives and involve recording the extent of weed occurrences, details of weed distribution and any new weed species infestation. Photographs, general descriptions and GPS coordinates have been taken of each of the surveyed areas of ML 1535 and Barrick-owned land. Weeds of concern, those that are declared noxious in the BSC Local Government Area, and environmental weeds are targeted with on-going weed control measures undertaken on a weekly basis or as required. The weed management program is reported in the AEMR section 3.9.
s.9.9/p.43	Pest control on ML 1535 will be conducted in accordance with the general procedures detailed in the LMP and in conjunction with adjacent landholders for more effective pest control in accordance with CRLPB and NSW Agriculture recommendations.	Use of the NSW Agriculture Vertebrate Pest Control Manual for pest control activities occurs as necessary. A regular control program for foxes has been conducted. During a mouse plague in 2011-2012, rodent control was implemented with 440 large rodent bait stations established on the ML 1535 area and Barrick owned land. Control of spiders and black crickets has also occurred at 3 to 6 monthly intervals.
s.10/p.45	In the event that a threatened species is identified within a Project disturbance area, the Threatened Species Management Strategy phase of the Threatened Species Management Protocol that involves the identification of mitigation measures to ameliorate any potentially significant impacts on the threatened species will be initiated.	No new threatened species were identified during the May 2014 to May 2015 period.

Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
s.11/p.46	In accordance with MCoA 3.4(a)(viii), fauna, flora, fish and aquatic invertebrates will be monitored as documented in the Project EIS and SIS.	The fauna, flora, fish and aquatic invertebrates monitoring has been conducted in accordance with the Surface Water, Groundwater, Meteorology and Biological Monitoring Plan (prepared to address the components of the Project EIS and SIS) and in accordance with Development Consent 14/98 MOD 10 condition 3.4(a)(viii).
s.11.1.5/p.49	The Blast Management Plan outlines a blast monitoring program that includes a network of six blast monitoring sites, two of which (sites BM04.1 and BM05) are located proximal to bird breeding areas…….. Barrick is required to undertake remedial measures if blasting overpressure demonstrably disturbs bird breeding.	Bird breeding activity has been variable since the filling of Lake Cowal in 2010 and it was reported that blasting did not have any noticeable effect on bird breeding activity. Bird breeding activity reduced as Lake Cowal dried up and it was reported that blasting did not affect bird breeding activity between May 2014 and April 2015.
s.11.1.6/p.50	Waterbird surveys of the New Lake Foreshore will be conducted annually after the completion of its construction. The monitoring programme will utilise the existing waterbird survey transect within ML 1535.	The New Lake Foreshore had not been established at the time of the audit (April 2015), as the mine construction works were not completed. Refer to DnA Environmental, January 2015, *Compensatory Wetland Monitoring* Report: *"The data obtained presently do not indicate any adverse effects occurring within the compensatory (CW) wetland areas, rather the restriction of grazing has promoted extensive regeneration of M. florulenta growing within the lake environment. These shrubs had become well established and were able to provide habitat and nesting sites for range of migratory birds during the four years that Lake Cowal was inundated. In the remaining and grazed wetland areas the extent of M. florulenta regeneration has been lower due to a combination of a cultivation history and heavy grazing by livestock and this was more pronounced in the grazed wetland areas."*
s.11.2.1/p.51	As described in the Compensatory Wetland Management Plan, monitoring will be conducted to determine whether vegetation planted within the New Lake Foreshore is establishing and to determine the need for any maintenance and/or contingency measures (such as the requirement for supplementary plantings, erosion control or weed and pest control). Visual observations will be made on a regular basis to assess whether plants are growing and to assess the health of planted vegetation. In addition, a number of survey plots (50 x 20 m) will be monitored annually following the commencement of revegetation activities (when the area is not inundated) to obtain quantitative data on species diversity and abundance.	
s.11.2.1/p.51	The quality of rehabilitation will be monitored using Ecosystem Function Analysis (EFA) or a similar systems-based approach.	
s.11.3.1/p.53	Biological monitoring, including fish and aquatic invertebrates, will be undertaken in accordance with Consent Condition 3.4(a)(viii). In accordance with Consent Condition 8.2(a)(iii), a biological monitoring program has been developed that will be implemented during the operations phase of the mine.	The biological monitoring program was developed in consultation with and to the satisfaction of the DI&I (Fisheries). In addition, the CGM Independent Monitoring Panel were consulted during preparation of this program. Details of this program are provided in the Surface Water,

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	(Flora and Fauna Management Plan addendum, May 2010).	Groundwater, Meteorological and Biological Monitoring Program (SWGMBMP).
s.11.3.2/p.54	As outlined in the Compensatory Wetland Management Plan, fish fauna surveys will be conducted within the New Lake Foreshore, Compensatory Wetland and remaining wetland areas within ML 1535, no more than annually, when the lake is full (ie. at full storage level).	A fish and aquatic invertebrate survey was conducted during July 2012, February 2013 and February 2014 in accordance with the SWGMBMP. The primary findings of the survey conducted during February 2014 were that "*The community composition of fish in the surveys was similar to the community composition of fish recorded elsewhere in areas of the Murray-Darling Basin that experience adverse environmental conditions (i.e. ephemeral water-bodies, high water temperatures, low percent saturation of dissolved oxygen). The fish communities of the study area are species-poor and were dominated by exotic species (i.e. Eastern Gambusia) that accounted for 98% of the catch; goldfish and the common carp".*
s.12.2.1/p.55	Water quality of Lake Cowal will be monitored for a number of parameters along the Lake Cowal transect and lake inflow sites.	Flora and Fauna Management Plan Table 6 outlines the monitoring locations, frequency of monitoring and surface water parameters that are monitored, in accordance with the SGWMBMP.
s.12.2.1.2/p.56	The Dust Management Plan outlines an air quality monitoring program that includes a network of 18 dust gauges to monitor dust deposition in the vicinity of the Project. Three of these dust gauges (ie. DG2, DG3 and DG4) are located proximal to bird breeding areas and will be analysed monthly. (Flora and Fauna Management Plan addendum, May 2010)	Dust deposition monitoring has occurred in accordance with the Dust Management Plan where possible. During the March to June 2012, the high water level of Lake Cowal resulted in the loss of some dust gauges located at sites within the inundated area of the lake. (Ref: Cattle, S. *Interpretation and Discussion of 2012 Air Quality Monitoring Results, Cowal Gold Mine*, University of Sydney). Modified dust gauge stands were installed enabling data collection from the submerged sites during inundation of Lake Cowal.
s.12.2.1.3/p.56	The Noise Management Plan outlines a noise monitoring programme that includes a network of six noise monitoring sites, two of which (sites NO3 and NO4) are located proximal to bird breeding areas. The noise monitoring sites will be monitored at six monthly intervals in accordance with MCoA 6.4(b) and 8.4(a)(i).	Noise monitoring was conducted six monthly by SLR in accordance with the Noise Management Plan until July 2014. Since July 2014 monitoring has been carried out at quarterly intervals in accordance with Development consent MOD 11 condition 6.3(e)(iii) and the new NMP (2015).
s.12.2.1.4/ p.56	The Blast Management Plan outlines a blast monitoring programme that includes a network of six blast monitoring sites, two of which (sites BM04 and BM06) are located	All blasts at CGM have been monitored in accordance with the Blast Management Plan.

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	proximal to bird breeding areas. In accordance with MCoA 6.3(i), Barrick will undertake remedial measures if blasting overpressure demonstrably disturbs bird breeding.	Blasting was reported to not have had any effect on bird breeding activity (refer to Lake Cowal Water Bird Monitoring Survey Progress Reports 2012 to 2014).
s.12.2.3.8/ p.59	A monitoring program will be developed to monitor fauna usage (including threatened fauna) of the final void. ……for the long-term management and monitoring of the area. The strategy will be submitted five years before mine closure.	Not yet activated. The strategy will be submitted five years before mine closure.
s.12.2.4.1/ p.60	Water quality of Lake Cowal will be monitored for a number of parameters along the Lake Cowal transect and lake inflow sites. Table 6 outlines the monitoring locations, frequency of monitoring and surface water parameters that will be monitored in accordance with the SWGMBMP. The default high conservation/ecological value protection level triggers (including the 99% protection level for toxicants) provided in ANZECC and ARMCANZ (2000) will be used to trigger surface water investigations, as described in Section 8 of the SWGMBMP. (Flora and Fauna Management Plan addendum, May 2010).	Water quality monitoring of Lake Cowal has occurred along the Lake Cowal transects and lake inflow sites identified in the Site Water Management Plan and Surface Water, Groundwater, Meteorological and Biological Monitoring Program. See Surface Water and Sediment Sampling and Analysis, Lake Cowal, NSW 2012 (McMahon Pty Ltd) report summary re trigger levels. No monitoring results between May 2014 and April 2015 resulted in triggering of the high conservation/ecological value protection scheme.
s.12.2.4.2/p.60	The location of the Cowal ore body is such that mining the deposit requires part of the open pit to extend beyond the full storage level of Lake Cowal and as a result will remove/modify potential habitat for fish fauna. The impact of removal/ modification of habitat on fish fauna will be monitored in accordance with the SGWMBP and CWMP.	A fish and aquatic invertebrate survey was conducted during July 2012, February 2013 and February 2014 in accordance with the SWGMBMP. The primary findings of the survey conducted during February 2014 were that "*The community composition of fish in the surveys was similar to the community composition of fish recorded elsewhere in areas of the Murray-Darling Basin that experience adverse environmental conditions (i.e. ephemeral water-bodies, high water temperatures, low percent saturation of dissolved oxygen).* The fish communities of the study area are species-poor and were dominated by exotic species (i.e. Eastern Gambusia) that accounted for 98% of the catch; goldfish and the common carp. Monitoring to assess the success of the wetland rehabilitation on the New Lake Foreshore and enhancement measures in the Compensatory Wetland areas (and remaining areas of wetland in ML 1535) will be part of the program outlined in the SWGMBMP.
s.12.2.4.2/p.60	The impact of removal/modification of habitat on fish fauna will be monitored in accordance with the surface water monitoring programme (as outlined in Table 6 and described in Section 4.3 of the SWGMBMP) and CWMP. (Flora and Fauna Management Plan addendum, May 2010). A monitoring program will be implemented to assess the success of the wetland rehabilitation on the New Lake Foreshore and enhancement measures in the Compensatory Wetland areas (and remaining areas of wetland in ML 1535) in improving wetland habitats for fish fauna.	

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s.12.2.4.4/p.60	The SWGMBMP outlines a sediment monitoring program that will be undertaken at lake transect sites, when water levels within Lake Cowal permit (dependent on sampling location). The sampling locations, frequency and parameters that will be monitored in accordance with the SWGMBMP.	Sediment monitoring has been conducted by DM McMahon and reported in the Surface Water and Sediment Sampling and Analysis Reports. The Lake Cowal sediment results assessed against the ANZECC and ARMCANZ (2000) recommended trigger values, indicated that the 2014 extractable results were below the recommended trigger values and were similar to the 2010 and 2014 monitoring results.
s.12.4/p.66	In the event that assessment of the monitoring results (Section 12.3) indicates that impacts are occurring on birdlife in bird breeding areas, threatened flora, threatened fauna, fish or aquatic invertebrates, contingency measures will be implemented.	No impact on birdlife in bird breeding areas, threatened flora, threatened fauna, fish or aquatic invertebrates that required contingency measures to be implemented, have been identified in the annual surveys conducted between 2010 and April 2014.
s.13/p.74	Upon the cessation of mining operations, tenure of ML 1535 will be maintained by Barrick until such time as lease relinquishment criteria are satisfied.	Not activated until the cessation of mining operations.
s.16/p.78	An AEMR/Annual Review will be prepared in accordance with the requirements of Consent Condition 9.2	Annual Review (AR) prepared by CGM in accordance with Development Consent 14/98 MOD 10 condition 9.2 reported flora and fauna management in sections 3.7 and 3.8.

4.4.2 Flora and Fauna Monitoring

[Development Consent 14/98 MOD 10 condition 3.4(a)]
[Development Consent 14/98 MOD 11 condition 3.2(b)(i)]

Flora and fauna monitoring is conducted in accordance with the Development Consent 14/98 MOD 10 condition 3.4(a) and Development Consent 14/98 MOD 11 condition 3.2(b)(i) and Flora and Fauna Management Plan section11.

The implementation of the Flora and Fauna Management Plan and monitoring of the CGM status in relation to flora and fauna has been reported in the various programs and reports produced. A summary of the findings of the flora and fauna monitoring surveys during 2014 and 2015 are:

- No replanting or additional tree and shrub planting occurred in the four monitoring quadrants set up on Fellman's Hill Revegetation Enhancement Project (RVEP) between May 2013 and May 2014. Monitoring at Fellman's Hill RVEP was conducted by DnA Environmental in November 2013.

- The Revegetation Enhancement Project reports prepared by DnA Environmental concluded that "*Macropods continue to graze the vegetation on Fellman's Hill. The fenced enclosures have demonstrated that heavy macropod preferentially take refuge within the dense woodland vegetation on the hills and ridges and their grazing can have significant effects of the recovery and health of the woodland vegetation. In the more open grassland areas the impacts appear to be relatively minor and*

macropod grazing in these grassland areas is likely to be desirable to encourage new plant growth and maintain species diversity".

- Recent Vegetation Clearance Protocol Reports were completed for:
  - an area at the Southern Tailing Storage Facility Depot where twelve (12) trees were removed (12 September 2011);
  - the east wall of the NTSF where 4 trees were removed (23 September 2011);
  - thirty-three (33) trees on the north-west corner of the Southern Waste Emplacement during demolition of the old 'Cowal West' homestead and relocation of the Shearing Shed (March 2011 - May 2012); and
  - seven (7) trees cleared adjacent Pond D9 to allow for the January 2013 relocation movement of the Millers Crusher topsoil stocks into this area.
  - multiple trees in the area north of the Southern Waste Rock Emplacement and east of the water storage ponds D8B and D9

- Bird surveys conducted in August and October 2013 and January 2014 on Lake Cowal by the Centre for Environmental Management, Federation University. The summary of findings of the bird surveys indicated that the continuing emptying of Lake Cowal had significant impacts on bird breeding and species diversity, due to the lowering water levels.

- The January 2011 survey of amphibian species carried out by Cenwest Environmental Services identified eight (8) frog species previously not recorded on the mine site. No threatened species were reported.

- The summary in the Surface Water and Sediment Sampling and Analysis Report on Lake Cowal, 2014 (D M McMahon Pty Ltd), in relation to water quality for Lake Cowal stated:

  - A comparison of the 2014 Lake Cowal surface water quality results against the baseline water quality results from 1991 – 1992 and 2010-2013 indicates that the 2014 monitoring results are generally similar.

  - A comparison of the 2014 Lake Cowal surface water quality results against the ANZECC and ARMCANZ (2000) default trigger values for surface water (lakes) indicates that the 2014 monitoring results (totals and dissolved) were below or marginally above the default trigger values.

  - A comparison of the 2014 Lake Cowal sediment results against the ANZECC and ARMCANZ (2000) recommended trigger values for sediment was undertaken. The monitoring results indicate that the 2014 extractable results were below all recommended trigger values and are generally similar to the 2010 - 2013 monitoring results.

- No fish species survey was conducted between February 2014 and April 2015 due to the low water level of Lake Cowal.

4.3.3 Conclusion

The Flora and Fauna Management Plan prepared for the CGM is compliant with the requirements of Development Consent 14/98 MOD 10 condition 3.4 and Development Consent 14/98 MOD 11 condition 3.2, and provides an adequate basis for the management of flora and fauna on the project MLA and surrounding Barrick owned land.

The implementation of the commitments in the Flora and Fauna Management Plan are supplemented by the commitments in the Compensatory Wetland Management Plan, Land Management Plan, Rehabilitation and

Offset Management Plan, and Surface Water, Groundwater, Meteorological and Biological Monitoring Program.

The monitoring program reports prepared under the Flora and Fauna Management Plan provide a comprehensive ongoing assessment of the status of flora, fauna, avifauna, fish and habitats of the CGM project development and demonstrate that the project has not had a measurable negative impact on the surrounding environment or its flora and fauna.

4.5 Compensatory Wetland Management

[Development Consent 14/98 MOD 11 condition 3.3]

4.5.1 Compensatory Wetland Management Plan

[Development Consent 14/98 MOD 11 condition 3.3]

The Compensatory Wetland Management Plan required under Development Consent 14/98 MOD 10 condition 3.10A(ii) was approved by DIPNR in 2003. The Compensatory Wetland Management Plan was reviewed in 2009 and as there had been no changes to the applicable guidelines, environmental requirements or operational practices no revision/update of the Plan was required.

The objectives of the Plan outline the compensation measures to be implemented for the loss of the 120ha of wetland that occurred during the mine development, through the enhancement of existing wetland within the CGM mining lease area during operation (and to continue following closure of the mine).

A Compensatory Wetlands Management Plan to satisfy the requirements of Development Consent 14/98 MOD 11 condition 3.3, will be submitted to DP&E. The review of the current Compensatory Wetlands Management Plan by Barrick concluded that there will not be any significant changes to the plan prepared under the Development Consent 14/98 MOD 10 condition 3.10(A(ii).

The Compensatory Wetland Management Plan includes Commitments that are listed in Table 13.

Table 13: Compensatory Wetland Management Plan Commitments

Section /Page No.	Compensatory Wetland Management Plan Commitments	Comments
s.6.1/p18	Wetland enhancement measures will be implemented within the Compensatory Wetland areas including: • the prevention of stock entry Into the enhancement area to encourage the natural regeneration of native plants; • measures to minimise the spread of weeds and competition with native flora; • measures to minimise the occurrence of feral pests; • provision of structural habitat for aquatic fauna; and • limiting vehicular access.	The compensatory wetland areas have been fenced to prevent stock entry, implementation of weed management fox baiting, rodent and locust management measures have been introduced as required, and vehicle access to the compensatory areas is limited by fencing and gated access points.
s.6.1/p18	Planting of native wetland species within the compensatory wetland may be undertaken if monitoring indicates that doing so is necessary to enhance the regeneration of native vegetation within the area	Monitoring of the wetland areas occurs to assess native vegetation succession, particularly along the lake foreshore as the water recedes following filling of the lake on 2010-2011. Planting of native species has not yet occurred, but will occur if the
s.6.1.1/p19	Monitoring will be conducted to assess the regeneration of native vegetation within the compensatory wetland and to determine the need for any maintenance and/or	

Section /Page No.	Compensatory Wetland Management Plan Commitments	Comments
	contingency measures (such as the requirement for the planting of native species and weed/pest control).	survey results indicate enhancement of the compensatory areas can be achieved.
s.6.1.3/p19	Revegetation for the New Lake Foreshore will create a freshwater ecological community with a focus on the establishment of waterfowl habitat.	Filling of the lake in 2011-2012, followed by near drought conditions during 2012-2014 has compromised development of the establishment of waterfowl habitat.
s.6.2.4/p25	The New Lake Foreshore will primarily be revegetated using native seedlings propagated on-site or obtained from a supplier	This has not been progressed as the New Lake Foreshore has not yet been established.
s.6.2.4/p26	Revegetation methods will be reviewed and revised annually in consideration of the results of revegetation trials.	Annual reviews of revegetation methods have been carried out by DnA Environmental and Carnegie Natives.
s.6.2.5/p26	Revegetation species for the New Lake Foreshore will also be selected in consideration of the lake's hydrological regime (wetting and drying cycles), species performance during revegetation trials and suitability to substrate conditions. Species selection will be an iterative process, whereby revegetation trials and monitoring will provide information as to the most appropriate species for revegetation	Selection of suitable species for revegetation of the New Lake Foreshore is considered during the assessment of the rehabilitation and compensatory wetland area monitoring. Revegetation has not progressed as the New Lake Foreshore has not yet been established.
s.6.2.6/p27	As a component of rehabilitation of the New Lake Foreshore, a number of revegetation trials will be undertaken. The revegetation trials will be drafted in the MOP and will include: evaluation of the relative revegetation establishment rates of native plant species; assessment of various establishment procedures and suitability of propagation methods; and determination of the New Lake Foreshores' suitability as revegetation media	Revegetation trials will be undertaken based on findings of annual DnA Environmental surveys.
s.7.2/p29	Weed control within ML 1535 wetland areas will be conducted in accordance with the applicable procedures detailed in the LMP to limit adverse weed effects at neighbouring private properties.	Annual weed surveys on the MLA and all Barrick owned land. Weed control is conducted regularly to reduce potential for weed invasion to private properties.
s.7.3/p31	The Barrick employees responsible for land management will implement pest control measures on Barrick-owned land, including wetland areas within ML 1535, in consultation with the CRLPB and NSW Agriculture, and in co-ordination with adjacent landholders. Pest control activities include: regular property inspections to assess the status of pest populations within Barick-owned land, including wetland areas within ML 1535, and the need for the implementation of appropriate control strategies;	Weed control, spraying for control of locust (APLs) infestation, and fox baiting programs have been implemented by CGM.
s.7.3/p31	Pest control for declared pests and foxes will occur in accordance with the RLP Act. Post control inspections to assess the effectiveness of the control measures implemented and review the need for alternative or additional control methods	Pest control inspections to assess effectiveness of the control measures have been conducted in accordance with the Rural Land Protection Act.

Section /Page No.	Compensatory Wetland Management Plan Commitments	Comments
s.8.1/p33	Subsequent to the removal of livestock, monitoring will be conducted to determine whether natural regeneration is occurring within those areas subject to enhancement measures. The monitoring of natural regeneration will be conducted annually following the removal of livestock.	Annual monitoring of Barrick owned land has been carried out by DnA Environmental to assess natural regeneration within areas subject to enhancement measures.
s.8.1.2/p34	Monitoring will be conducted to determine whether vegetation planted within the new lake foreshore is establishing and to determine the need for any maintenance and/or contingency measures	Annual monitoring of the lake foreshore areas has been carried out by DnA Environmental. Monitoring of the New Lake Foreshore has not occurred as no revegetation of this area has yet commenced.
s.8.1.3/p34	Incidental observations of fauna activity within ML 1535 wetland areas will be documented during weekly inspections of ML 1535. Surveys will also be conducted to determine the usage of wetland areas by wildlife.	Incidental 'drive' around surveys are conducted weekly on the MLA by CGM Environmental staff and observations recorded.
s.8.1.3/p34	Waterbird surveys will be conducted by year 5 of mine operations within the compensatory wetland and remaining wetland areas within ML 1535, and thereafter, annually. A number of survey transects will be established within the compensatory wetland and remaining wetland areas within MML 1535 to survey waterbird diversity and abundance.	Lake Cowal Waterbird Monitoring Surveys have been conducted three times per year (in January, August and October) by Peter Gel and Paul Peake from the Centre for Environmental Management University of Ballarat.
s.8.1.3/p34	Fish fauna surveys will be conducted within the compensatory wetland and remaining wetland areas within ML 1535, no more than annually, when the lake is full.	Fish surveys were conducted by frc environmental in 2011, 2012 and 2014 since the filling of Lake Cowal in 2011. The surveys ceased in 2015 due to emptying of the lake.
s.8.1.3/p34	A survey of terrestrial fauna will also be conducted of the New Lake Foreshore once vegetation has established and before year six of mine operations. Survey may include visual and opportunistic observations, active searches, spotlighting, identification of bird calls, amphibian calls, Elliott trapping and electronic call detection.	Terrestrial fauna surveys have been included in the DnA Environmental reports. Specific monitoring of the New Lake Foreshore area has not yet been undertaken as the New Lake Foreshore area has not been established.
s.8.2/p34	Maintenance activities may be undertaken to facilitate the enhancement of wetland habitats. Routine maintenance measures may include: • supplementary plantings to replace any losses; • control of erosion and sedimentation; • the use of tree guards to provide protection against wind, frost, vermin and herbivores; • weed and pest control; and • limiting vehicle access	Maintenance activities in the wetland habitat areas around the lake foreshore temporary and permanent bunds, has occurred as required to reduce erosion and control weed infestation and pests.
s.9/p35	Prior to the cessation of mining operations, Barrick will develop a strategy for the long-term land-use of its landholdings, including the wetland areas within ML 1535. The strategy for long-term land-use of the Project area and Barrick-owned land will be submitted five years before mine closure. The strategy will be developed in consultation with the DLWC,	Noted. Yet to be commenced.

Section /Page No.	Compensatory Wetland Management Plan Commitments	Comments
	environmental protection authority, NPWS, BSC and to the satisfaction of the Director-General.	
s.12/p39	An AEMR will be prepared in accordance with the requirements of consent condition 9.2 and DMR requirements and submitted to the Director-General.	Annual Environmental Management Reports (AEMR) prepared by CGM in accordance with MOD 10 condition 9.2, address compensatory wetland management in section 3.7.

4.5.2 Compensatory Wetland Area Surveys

Surveys of the compensatory wetland area have been undertaken annually by DnA Environmental during late spring (October/November), since 2005. The latest report dated January 2015 concluded:

> *"Most changes in the wetlands have occurred as a result of climatic and biophysical factors and these were compounded in areas subjected to livestock grazing, especially during the dry conditions. Ongoing monitoring of these sites are (sic) likely to demonstrate further and significant changes with the drying of the lake and the development of the ephemeral wetland communities after a long agricultural history and significant flood event, especially in areas which are now restricted from grazing".*

4.5.3 Conclusion

The Compensatory Wetland Management Plan provides a comprehensive management and monitoring regime that is providing detailed reports on the status of the accessible compensatory wetland areas. The surveys and reports on the flora and fauna in the declared areas are indicating that the removal of livestock from grazing in the compensatory wetland areas and the climatic influences (particularly the heavy rainfall years and flooding of the Lake Cowal area), have had a significant positive influence on the structure and composition of the lake foreshore communities.

4.6 Biodiversity Offset

[Development Consent 14/98 MOD 11 condition 3.4]

4.6.1 Biodiversity Offset Strategy

[Development Consent 14/98 MOD 11 condition 3.4(a) and 3.4(b)]

The Biodiversity Offset Strategy is included in the Biodiversity Offset Management Plan. The Biodiversity Offset Management Plan was submitted to OEH on 25 February 2015 for comment and a response was received on 13 March 2015. Barrick was awaiting a response from DP&E at the date of this audit (23 April 2015).

To address Development Consent 14/98 MOD 11 condition 3.4(b) Barrick proposed a Voluntary Conservation Agreement (VCA) and consulted with the OEH in relation to the development of a VCA. The VCA was not agreed to by OEH.

Barrick then prepared a Voluntary Planning Agreement (VPA) for the Offset Areas that was submitted to DP&I on 28 April 2014. A decision on the Voluntary Planning Agreement (VPA) by DP&E in relation to the long term protection of the biodiversity offset areas submitted to DP&I on 28 April 2014 was still under negotiation /consultation with DP&E at the date of this audit (23 April 2015). (A letter was sent to DP&E on 18 June 2015 requesting an extension for VPA and BOMP Bond to be completed by end-December 2015). (Refer to section 4.6.3 below).

4.6.2 Biodiversity Offset Management Plan

[Development Consent 14/98 MOD 11 condition 3.4(c)]

The Biodiversity Offset Management Plan was submitted to OEH on 25 February 2015 for comment and a response was received on 13 March 2015. Barrick was awaiting a response from DP&E at the date of this audit (23 April 2015).

4.6.3 Conservation Bond

[Development Consent 14/98 MOD 11 condition 3.4(d)]

The Conservation Bond has not been lodged at the date of this audit (23 April 2015) as the Biodiversity Offset Strategy and Biodiversity Offset Management Plan had not been approved.

Development Consent 14/98 MOD 11 condition 3.4(d) requires the Conservation Bond to be lodged by the end of July 2015 (or later with the agreement of the Secretary of DP&E). The calculation of the conservation bond and lodgement requires the approval of the proposed offset areas, Biodiversity Offset Strategy and Biodiversity Offset Management Plan by DP&E / OEH.

4.6.4 Conclusion

Barrick have prepared and submitted the Biodiversity Offset Strategy and Biodiversity Offset Management Plan to DP&E following consultation with OEH. The calculation of the conservation bond and lodgement with DP&E (to satisfy Development Consent 14/98 MOD 11 condition 3.4(d)), requires approval of the proposed offset areas, Biodiversity Offset Strategy and Biodiversity Offset Management Plan by DP&E / OEH.

4.7 Erosion and Sediment Control

[Development Consent 14/98 MOD 11 condition 3.5]

4.7.1 Erosion and Sediment Control

[Development Consent 14/98 MOD 11 condition 3.5(a)]

An Erosion and Sediment Control Management Plan required by Development Consent 14/98 condition 3.5(a) was approved by DIPNR in 2004. Review and amendment of the Erosion and Sediment Control Plan has occurred as required as the project has progressed and the revised Plan submitted for approval when significant changes for the operational management of the site have been proposed.

The Plan presents general measures to be implemented to control erosion and sediment loss to the environment from the disturbed areas of the project site.

A revised Erosion and Sediment Control Management Plan required under Development Consent 14/98 MOD 11 condition 3.5(a) was prepared and submitted to DP&E on 24 February 2015. Barrick was awaiting a response from DP&E at the date of this audit (23 April 2015).

The commitments outlined in the Erosion and Sediment Control Management Plan are summarised in Table 7.

Table 7: Erosion and Sediment Control Management Plan Commitments

Section /Page No	Erosion and Sediment Control Management Plan Commitments	Comments
s.4.2.2/p62	As the pipeline will be buried, no permanent erosion and sediment controls are necessary. The buried pipeline corridor will be progressively rehabilitated.	The pipeline construction across Lake Cowal and along the alignment to the east of the lake towards the production bores occurred in 2004 involved the burial of the pipe 1.5 metres below the surface and refilling of the trench with the original excavated material compacted to the original ground level.
s.4.2.3/p63	Weekly inspections will be undertaken during the operational phase of the Project to ensure revegetation and planting areas along the buried pipeline corridor have properly established. Inspections will record condition of the erosion and sediment control structures; maintenance requirements (if necessary) including instructive actions; volume of sediment removed (eg. from sediment basins to retain capacity requirements); and sediment disposal locations	Inspection of the pipeline alignment occurred following completion of construction in 2004 until Lake Cowal filled with water in 2010-11. No erosion along the corridor was recorded during the period the lake bed was dry. The monitoring of the pipeline route, or rehabilitation did not occur during the period of inundation of Lake Cowal between 2010 and May 2014. Inspections had recommenced where access on the Lake bed was possible, following lowering of the water level in the Lake.
s.4.2.3/p63	Maintenance activities, including; cleaning out of containment structures, diversion drains etc where sediment/sand/soil/ vegetation builds up; repairing of areas of erosion (eg. Lining with a suitable material which may include use of grasses, plastic, geotextile, rock, concrete); further application of seed/fertiliser in areas of minor soil erosion and/or inadequate vegetative establishment; and installation of additional erosion and sediment control structures.	Maintenance activities have occurred as required to ensure the erosion and sediment control structures retain their operational performance around containment structures, diversion drains with additional erosion and sediment control structures installed as required.
s.5.2.3/p66	Regular inspections will be undertaken during the operational phase of the project to ensure revegetation and planting areas along the relocated Travelling Stock Route have properly established. Inspections will record condition of the erosion and sediment control structures; maintenance requirements (if necessary) including instructive actions; volume of sediment removed (eg. from sediment basins to retain capacity requirements); and sediment disposal locations	The new road and Travelling Stock Route (TSR) works were completed in Q1 2004. Barrick transferred Lot 100 DP 1059150 as the land for the new TSR to the Crown as. The TSR is regularly inspected and maintenance or repairs conducted to maintain the route and manage erosion.
s.6.1/p68	Salinity - Limit clearing of areas; clearly delineated, where appropriate, with barrier mesh and sediment fencing in accordance with 4.2.1 of Managing Urban Stormwater - soils and construction. Unrestricted vehicular plant access to undisturbed areas will not be permitted. Vegetation in close proximity to works areas will be demarcated with flagging tape so as to prevent	Areas of surface disturbance where salinity may be a potential problem have been defined prior to commencement of any land disturbance works and access limitations are imposed. All CGP employees and contractors undertake induction training that

Section /Page No	Erosion and Sediment Control Management Plan Commitments	Comments
	disturbance. All employees will undertake an induction/training programme.	includes restriction of access to demarcated areas.
s.6.1/p68	Identification of saline soils (infill testing) and selective soil resource management.	Infill testing of soil profiles is undertaken when new areas of works are commenced.
s.6.1/p68	Identification of low salinity construction material (construction fill testing) and selective resource management	Testing of soil profiles is undertaken when new areas of works are commenced.
s.6.1/p68	Fencing ML 1535 to restrict stock and prevent overgrazing and erosion.	ML 1535 has been fenced to restrict stock entry and the fence is inspected monthly and maintenance works conducted if necessary.
s.6.1/p68	Implementation of appropriate erosion and sediment control systems and ongoing monitoring and maintenance including water monitoring (suspended solids, EC and pH).	Monitoring and maintenance of erosion and sediment control structures occurs after rainfall events and water quality is tested.
s.6.2/p69	Containment and management of saline surface water runoff. The surface water management strategy is contained in the SWMP.	Surface water management within ML 1535 occurs in accordance with the SWMP.
s.6.2/p70	During project operations, water will accumulate within open pit/final void due to surface water runoff. The final void will intercept a large proportion of runoff, preventing sediment from entering the Lake. As a result, salt loads entering the lake from the Project site are expected to marginally decrease post mining as salt will also be trapped by the void.	A strategy for the long term management of the final void will be developed in consultation with relevant agencies and stakeholders in accordance with Development Consent 14/98 MOD 11 Condition 4.4(b).
s.7/p71	Soil Management – the general strategy of soil resource management will be to strip soil resources from all proposed mine disturbance areas within ML 1535 and store these in dedicated stockpile areas for reuse during progressive rehabilitation works.	All topsoil resource is stripped from proposed mine disturbance areas within ML 1535 and placed in dedicated stockpile areas for reuse during rehabilitation works.
s.7.2/p72	Vegetation Clearance Protocol and Threatened Species Management Protocol will be implemented consisting of Pre-clearance survey for flora, including a targeted survey for any threatened species recorded in the mine site area; and preliminary and secondary fauna habitat assessments.	The Vegetation Clearance Protocol and Threatened Species Management Protocol are implemented and completed prior to any clearing of previously undisturbed areas of ML 1535.
s.8/p74	Effective rehabilitation will be implemented by undertaking the rehabilitation programme in accordance with the general principles outlined in the EIS. These include: the rehabilitation of project landforms is to be progressive and conducted in accordance with approved, verified plans which are to be updated manually (MCoA 3.6 and 6.2(ii)).	Rehabilitation of disturbed areas is undertaken in accordance with the Rehabilitation Management Plan and the current Mining Operations Plan for ML 1535.
s.8/p74	The stability of newly prepared landforms prior to the establishment of long term vegetation is to be protected via the construction of moisture-retaining graded drains, water-holding structures (e.g. surface depressions) and, where appropriate, the use of authorised hybrid cover crops to provide initial erosion protection	Stability of newly prepared landforms is undertaken in accordance with the Rehabilitation Management Plan and the current Mining Operations Plan for ML 1535.

Section /Page No	Erosion and Sediment Control Management Plan Commitments	Comments
s.8/p74	Rehabilitation of the outer embankments of the tailings storages to be grassed during processing operational years, reducing habitat opportunities for avifauna	The outer embankments of the tailings storage facilities are progressively grassed for stability and to reduce potential habitat for avifauna. The tailings storage facility batters are inspected regularly.
s.8/p74	Endemic groundcover, understorey and tree seed and seedlings will be cultivated and utilised	Endemic groundcover, understorey and tree seed and seedlings are utilised where practicable.
s.8/p74	The annual rehabilitation program and budget is to be prepared by a site team incorporating the Project's senior management.	The annual rehabilitation program and budget is prepared by a site Environmental Section team including CGM Project senior management.
s.11/p78	Report on the effectiveness and performance of the sediment and erosion control systems against the objectives contained in the ESCMP to: control the movement of sediment and salinity migration from areas disturbed by mining and construction activities; and maintain downstream (Lake) water quality.	Effectiveness and performance of the sediment and erosion control systems against the objectives contained in the ESCMP are reported annually in the AEMR section 3.2.
s.12/p79	Annual Environmental Management Report	Annual Environmental Management Reports (AEMR) prepared by CGM in accordance with MCoA 9.2, addressed erosion and sediment control aspects in section 3.2.

4.7.2 Erosion and Sediment Control Performance

Erosion and sediment control management has involved maintenance and inspection of erosion and sediment control structures after trigger rainfall events.

The CGM geotechnical department conducts monthly monitoring and assessment of all water holding ponds on site, waste rock emplacements and the lake protection bund for sediment movement and effectiveness of erosion control. The ongoing management of erosion and sediment control on the batters of the temporary lake protection bund has included rock armouring to ensure that the rehabilitation of the constructed surfaces is maintained for long term stability.

Lake Cowal has not been impacted by sediment inflow from the CGM disturbed areas, due to the presence and effectiveness of the temporary isolation bund (TIB) and initial vegetation cover on the adjacent lifts of the emplacement areas trapping sediment movement.

The Lake Cowal water and sediment quality report prepared by D M McMahon Pty Ltd, (Surface Water and Sediment Sampling and Analysis, Lake Cowal, NSW 2014) stated:

> *"A comparison of the 2014 Lake Cowal surface water quality results against the baseline water quality results from 1991 – 1992 and 2010-2013 indicates that the 2014 monitoring results are generally similar."*

Lake Cowal water quality results have not indicated any impact on Lake Cowal from the disturbed areas of the CGM project site during the 2010-2015 period of inundation of the Lake Cowal bed. The erosion and sediment

control structures appear to have intercepted sediment laden runoff from the C GM site and retained the sediment on-site in ponds D4 and a 'stilling basin', prior to any discharge of water from the site to Lake Cowal.

The Barrick Tailings Management Standard requires TSF walls to meet a 1:5 dynamic stability requirement for a 1:5,000 year earthquake event. To achieve this standard, rehabilitated material is being stripped from the TSF walls to allow rock buttressing to be placed. Rehabilitation material from the second lift of the NTSF and third lift of the STSF is currently being stripped and either stockpiled or moved to the PWE or SWRE for use in rehabilitation of those areas.

Contouring of an area of the SWRE to a slope of 1:5 has been carried out and the area rehabilitated.

4.7.3 Conclusion

The erosion and sediment control strategies implemented under the Erosion and Sediment Control Plan have been considered effective in meeting the objectives of the Erosion and Sediment Control Plan, as demonstrated by the environmental performance indicators. The Erosion and Sediment Control Plan is generally consistent with requirements in *Managing Urban Stormwater: Soils and Construction (Volume 2E – Mines and Quarries) Manual* (EPA 2008) Appendix C.

4.8 Soil Stripping

[Development Consent 14/98 MOD 11 condition 3.5(b)]

4.8.1 Soil Stripping Management Plan

[Development Consent 14/98 MOD 10 condition 3.5(b)]
[Development Consent 14/98 MOD 11 condition 3.5(b)]

The Soil Stripping Management Plan required under MCoA 3.5(b) was approved by DIPNR in 2003. The Plan was reviewed in 2009 and the current details of soil stockpile location, stripping volumes and soil management measures are provided in the current *"Cowal Gold Project Mining Operations Plan."* The Soil Stripping Management Plan presents the processes and scheduling for the soil stripping activities in the Mining Operations Plan(s) (prepared in accordance with the Mining Lease requirements). A new Soil Stripping Management Plan required by Development Consent 14/98 MOD 11 condition 3.5(b) was submitted to DP&E on 24 February 2015 and Barrick was awaiting approval at the date of this audit (April 2015).

The Soil Stripping Management Plan includes the Commitments summarised in Table 8.

Table 8: Soil Stripping Management Plan Commitments

Section /Page No.	Soil Stripping Management Plan Commitments	Comments
s.4/p9	Characterisation of the suitability of material for rehabilitation works is to be conducted prior to stripping (including both the EIS assessment and further infill testing - Section 4.1)	Infill testing of soil profiles is undertaken for each new area of works commenced.
s.4/p9	Strip and store soil resources on areas proposed for mine development. Store in a way that long term viability is ensured and maintained	Soil resources are stripped and placed on specific stockpile emplacements for reuse in rehabilitation. The stockpiles are limited in height and time of storage is kept to a minimum to ensure viability of the soil characteristics.

Section /Page No.	Soil Stripping Management Plan Commitments	Comments
s.4/p9	Progressively rehabilitate final landforms as soon as soon as practical after completion of landforms or when areas are no longer required.	Final landforms are being progressively rehabilitated when areas are no longer required for mining activities, in accordance with the Rehabilitation Management Plan and MOP.
s.4.1.1/p10	Ensure that soil moisture conditions are suitable for stripping by examining meteorological data. If conditions are unsuitable, stripping will be postponed until conditions are suitable.	Weather conditions and soil moisture are assessed prior to soil stripping to confirm suitable conditions for removal of the soil profile components for stockpiling.
s.4.2/p11	Topsoil and subsoil will be stripped and stored in separate stockpiles comprising topsoil; low salinity subsoil; gypsum treated subsoil and native seeded subsoil.	Soil horizons are stripped and placed on separate stockpiles for storage to provide suitable topsoil and subsoil classes for rehabilitation.
s.4.2/p12	Hard pedal red duplex upper sub soil material will be stripped as a priority and stored as the primary topsoil resource.	Red duplex upper subsoil material is stripped and stored as the primary topsoil resource.
s.4.3/p12	Soil stripping activities (including infill soil testing) will comply with the requirements of the NPWS Section 87 permit and Section 90 consent granted under the *National Parks and Wildlife Act, 1974.* These allow collection of visible artefacts prior to soil stripping and also the collection of unknown artefacts that may be contained within the soil profile. In accordance with Condition 11 of the Section 87 permit, "*all areas where soil stripping occurs shall be inspected following this operation in the event that datable materials might be revealed*" (MCoA 3.3(b)).	Aboriginal artefact surveys are conducted by the Archaeological Consultant and local Aboriginal Land Council representatives on any new area prior to disturbance to enable the collection of visible artefacts prior to soil stripping, in accordance with the conditions of the Section 87 permit and Section 90 consent, granted under the *National Parks and Wildlife Act, 1974.*
s.4.3/p12	Vegetation Clearance Protocol and Threatened Species Management Protocol will be implemented when stripping soil, including: • pre-clearance survey for flora; • targeted survey for any threatened species recorded in the mine site area; and • preliminary and secondary fauna habitat assessments (MCoA 3.4(a) and (b)).	The Vegetation Clearance Protocol and Threatened Species Management Protocol are completed prior to any vegetation clearing or soil stripping of previously undisturbed areas of ML 1535
s.4.3/p13	Barrick to minimise the removal of trees and other vegetation to approved areas (MCoA 3.10(B)).	Development of the CGM on ML 1535 has occurred with removal of trees and other vegetation kept to the minimum required for the development.
s.4.3.1/p13	No disturbance of Belah Woodland (as identified on Figure 3-13 of the EIS) is permitted and no soil stripping will be undertaken within these areas (MCoA 3.10(D)).	No disturbance of Belah Woodland has occurred during the development of the CGM.
s.4.3.1/p13	Through all stages of soil stripping earthworks, soil stockpiling and re-application for rehabilitation, operations will be closely supervised to maintain correct recovery depths of suitable soils.	All stages of soil stripping earthworks, soil stockpiling and re-use of soils for rehabilitation, are supervised by CGM personnel to maintain correct recovery depths of suitable soils.
s.4.3.2/p13	Prior to initiation of soil stripping activities, site supervisor will ensure that the appropriate protocols (e.g. aboriginal heritage and land clearance	The relevant Vegetation Clearance, Threatened Species Management, Aboriginal Heritage, and Land Clearance

Section /Page No.	Soil Stripping Management Plan Commitments	Comments
	requirements in accordance with Consent Condition 3.3 and 3.4(b)) have been followed and the recommended stripping depths are confirmed ahead of stripping (section 4.1)	protocols are completed prior to any soil stripping activities occurring on undisturbed land within ML 1535.
s.4.3.2/p14	The control of soil erosion and dust along the pipeline and bore-field areas will be in accordance with the DMP and ESCMP and will include the adoption of measures such as: • watering of works areas when necessary; • installation of soil/sediment control measures where necessary (e.g. the installation of silt fencing); • regular inspection of works and stockpile areas and enactment of any remedial or response measures with respect to dust and soil/sediment control.	The installation of the pipeline along the alignment from the Paleochannel bore-field was undertaken when the Lake bed was dry in 2004. The required mitigation measures in relation to dust generation and erosion and sediment control were implemented.
s.4.3.2/p14	Works associated with the burial of the water pipeline will be in accordance with the general requirements of the DIPNR and in consultation with NSW Fisheries. Soil stockpiles will be short term features during pipeline burial and soils will be promptly replaced during the progressive rehabilitation of the pipeline burial route (MCoA 4.4(b)).	The installation of the pipeline along the alignment from the Paleochannel bore-field to the CGM site was undertaken in 2004 when the Lake bed was dry a in accordance with the regulatory requirements of DIPNR and NSW Fisheries.
s.4.3.3/p14	A section of the existing TSR is to be relocated around the MLA area. Where soils are disturbed by public road construction works, soil stripping will comply with the general stripping procedures outlined in section 4.3 (MCoA 3.9(b)).	The section of the Travelling Stock Route (TSR) was relocated around the MLA area and the works completed in Q1 2004 in accordance with the general procedures outlined in the Soil Stripping Management Plan.
s.4.4/p14	Soil stockpiles will be located outside the Lake Cowal flood plain and will avoid the areas of Wilga Woodland (MCoA 3.1(C)).	All soil stockpiles have been located outside the Lake Cowal flood plain and have not imposed on areas of Wilga Woodland.
s.4.4/p14	The surface of the completed soil stockpiles will be left in a 'rough' condition to help promote water infiltration and minimise erosion, prior to vegetation establishment.	Soil stockpiles surfaces are left in a rough condition to allow rainfall infiltration and reduce erosion from surface runoff.
s.4.4/p14	Soil stockpiles will be fertilised and seeded to maintain soil organic matter levels, soil structure and microbial activity.	Long term soil stockpiles are managed to maintain soil structure and microbial activity.
s.4.4/p15	Subsoil stockpiles may also be treated with gypsum to reduce dispersiveness during stockpiling.	Subsoil stockpiles are treated with gypsum if required to reduce dispersive soil reactions.
s.4.4/p15	All soil stockpiles are to be signposted with the date of placement and type of soil/overburden for identification on drawings in the MOP and AEMR	Soil stockpiles are signposted and locations, soil type and date of placement recorded on drawings in accordance with the MOP.
s.4.4/p15	All soil stockpiles will be recorded on a site database maintained by Barrick that will detail the location and volume of each stockpile and the stockpile	All soil stockpiles are recorded on a site database that details the location and volume of each stockpile and the stockpile maintenance records.

Section /Page No.	Soil Stripping Management Plan Commitments	Comments
	maintenance records in accordance with the requirements of the DIPNR and EIS.	
s.4.4/p15	Where practicable, soil will be stripped from one area and immediately transferred to an active rehabilitation area for direct placement. This will reduce the size of soil stockpiles and optimise soil fertility for rehabilitation.	Stripped soil is placed on active rehabilitation areas as soon as practicable after stripping.
s.4.4/p15	Long term topsoil stockpiles will be constructed up to a maximum of 3 m in height with slopes at a maximum acceptable angle to resist erosion. The native seed topsoil stockpile will not exceed 2 m in height.	Long term topsoil stockpiles are constructed to a maximum of 3 m in height with slopes at an angle to resist erosion.
s.4.4.1/p16	Soil conservation water management features will be implemented where practical and include the use of silt fences and sediment traps to minimise soil movement; use of diversion banks, channels and rip-rap structures to divert surface water around disturbed areas and control runoff velocity; constructing roads at appropriate slope along the contour.	Silt fences / sediment traps to minimise soil movement, use of diversion banks, channels and rip-rap structures to divert surface water around disturbed areas and control runoff velocity; and construction of roads at appropriate slope along the contour has occurred to manage water runoff.
s.4.4.2/p17	Where required to improve structural and fertility characteristics prior to application, soil stockpiles will be deep-ripped to establish aerobic conditions. Soil stockpiles will have sediment control measures installed in accordance with the requirements of the ESCMP. The control measures used will depend on the size and location of each stockpile.	Management of the soil stockpiles to maintain soil structural characteristics occurs in accordance with the ESCMP, dependent on the size and location of each stockpile.
s.5/p18	The rehabilitation of Project landforms is to be progressive and conducted in accordance with approved, verified plans which are to be updated annually.	The rehabilitation of the CGM project area is assessed annually and the rehabilitation works are progressed when conditions are suitable, in accordance with plans and predictions provided annually in the AEMR and MOP and reporting required under the approved MOP.
s.5/p18	The stability of newly prepared and topsoiled landforms is to occur via the construction of moisture-retaining graded drains, water-holding structures and, where appropriate, the use of authorised hybrid cover crops to provide initial erosion protection.	Stability of newly prepared landforms is undertaken in accordance with the Rehabilitation and Offset Management Plan and the MOP for ML 1535.
s.5/p18	Rehabilitation of the outer embankments of the tailings storages to be grassed during processing operational years, reducing habitat opportunities for avifauna.	The outer embankments of the tailings storage facilities are progressively grassed for stability and to reduce habitat potential for avifauna. The tailings storage facility batters are inspected regularly for erosion and stability of the slopes.
s.5/p18	Rehabilitation works will be described in the MOP in accordance with the requirements of the DMR.	Rehabilitation works as described in the MOP follow the requirements of the DMR guidelines.
s.5/p19	Effective rehabilitation will be ensured by:	Rehabilitation of disturbed areas is undertaken in accordance with the

Section /Page No.	Soil Stripping Management Plan Commitments	Comments
	• the implementation of the rehabilitation programme in accordance with the above general principles; • rehabilitation maintenance work; • rehabilitation monitoring activities and compliance with the DMR's Mining Rehabilitation and Environmental Management Process.	Rehabilitation and Offset Management Plan, the approved MOP for ML 1535, and in accordance with the DMR *Mining Rehabilitation and Environmental Management Process*.
s.8.1/p22	Soil stripping will be reported in accordance with the MOP. In accordance with MCoA 9.1 the predicted annual soil stripping volumes and detailed soil stockpile locations and soil management measures will be provided in the Cowal Gold Project MOP.	Soil stripping and rehabilitation are reported annually in accordance with the MOP and in the AEMR section 5.
s.8.2.1/p23	Effectiveness of soil stripping methods will be recorded in a site soil database that will include soil stockpile locations, soil volumes, amelioration treatment, weed control, fertiliser application and date(s) of soil stripping (MCoA 3.5(b)).	Soil stripping is recorded in the site soil database, includes soil stockpile locations, soil volumes, amelioration treatment, weed control, fertiliser application and date(s) of soil stripping. This database is revised annually.
s.8.2.1/p24	Soil stripping activities against the objectives of this SSMP and the soil management objectives/strategies of the EIS are reported in the AEMR.	Annual Environmental Management Reports (AEMR) have been prepared by CGM in accordance with MCoA 9.2 and the erosion and sediment control status is reported in AEMR section 5, and Table 38.

4.8.2 Soil Stripping Activity

Soil stripping on the CGM site where required for the development on the mine, has occurred in accordance with the Soil Stripping Management Plan. In total more than 1.7 million m^3 of topsoil and 2.0 million m^3 of subsoil are stored on site.

The topsoil stockpile database is updated annually as new mining stockpile information is obtained from estimates determined from the site activities. Aerial photography and surveying of the soil stockpiles is conducted to accurately record soil stockpile locations and volumes (see Figure 4.8.2).

4.8.3 Conclusion

The Soil Stripping Management Plan has been implemented and the separation of the topsoil and subsoil horizons stockpiles has occurred. Reuse of the topsoil and subsoil has occurred for rehabilitation trials and final constructed surfaces on the tailings storage facilities and waste rock emplacement areas. The Soil Stripping Management Plan and implementation is considered adequate and representative of mining best practice.

The topsoil stockpile database is updated as new mining stockpile information is obtained from estimates determined from the site activities. Aerial photography and surveying of the soil stockpiles is conducted to accurately record soil stockpile locations and volumes.

4.9 Bushfire Management

[Development Consent 14/98 MOD 11 condition 3.6]

CGM has two Category 7 fire tenders and two emergency firefighting units of approximately 1000L each housed in an Emergency Response Station on the CGM site near the main maintenance workshop. CGM has staff trained / active in the Bland-Temora Zone RFS and can assist RFS brigades (Wamboyne, Clear Ridge and Blow Clear) with response to fire in the vicinity of the CGM site. The Bushfire Management Plan although not required by Development Consent 14/98 MOD 11 is being kept as an internal control measure, and outlines fuel management and fire incident control measures implemented at CGM to reduce fire risk to the immediate rural area. The Bushfire Management Plan also describes response procedures to fires including assessment, control and clean-up, generally guided by the NSW Rural Fire Service (RFS).

Response capability available in the CGM area, additional to the CGM equipment and personnel, includes three regional RFS brigades (Wamboyne, Clear Ridge and Blow Clear).

The commitments outlined in the Bushfire Management Plan are summarised in Table 11.

Table 11: Bushfire Management Plan Commitments

Section/ Page No.	Bushfire Management Plan Commitments	Comments
s.5.2/p14	On-site "emergency firefighting unit" will be located prior to the commencement of significant construction works. Fuel management and hazard reduction works associated with the Project construction period will also commence at this time (MCoA 3.8(a) and (b) and section 6.4.4 of the EIS)	Barrick have two Category 7 fire tenders, two (2) trailer-mounted 1000L firewater tanks and fire hose units housed in the Rescue Station located near the main maintenance area workshops. Barrick also has two spill response units available on site. A first aid/ambulance vehicle is also permanently based on site and a first aid room is located in the administration building adjacent to the process plant.
	 **CGM Category 7 fire tenders**	 **CGM Emergency Response Rescue Station**
s.5.3/p15	Barrick intends to have at least one trained and equipped fire response team within each shift at the project (section 4.1.1)	Permanent CGM Emergency Response Officers are employed on-site on a rotational shift basis. The CGM Emergency Response Team undertakes regular training sessions in firefighting skills and fire appliance familiarization and also receives regular training as members of RFS. General CGM staff fire training includes basic theory on the Emergency Response Plan, fire

Section/ Page No.	Bushfire Management Plan Commitments	Comments
		awareness theory and basic hose handling techniques.
s.5.4/p15	The project will have a fully functional and approved fire water supply designated to supply the mine offices, workshops and ancillary infrastructure. RFS brigades will contact the Project Emergency Response Coordinator if reticulated water is required for bushfire purposes.	RFS are able to draw water from Pond D6 or fill tankers from the Pond D6 pump off-take manifold or any other hydrant on site in the event of any fire incidents.
s.5.6/p15	Data from the site meteorological station will be used to determine whether conditions are suitable for fire management activities and bushfire fighting activities (MCoA 8.7)	Data from the site meteorological station is continually available to the CGM Emergency Response Officers for use during firefighting activities.
s.5.7/p16	A register will be maintained to outline the following within the Project area and Barrick-owned lands: • records of maintenance works undertaken in fire trails and the date the work was undertaken; • records of any fuel management measures undertaken and the dates the work was undertaken; and • details of the fire history of the project area, recorded as site observations.	A Fire Trail Register for the mine lease area is maintained on the CGM computer network. The register lists the location of the fire trails and the trails are also marked on a site map, action planned for fire trail maintenance, date of action required and completion dates.
s.6.2/p16	Strategies for fuel management will be adopted as appropriate and include: • grazing, slashing, pruning, mulching or other operations; • fuel management via burning where conventional fuel management strategies are inappropriate, impracticable or not successful; and • maintenance of designated firebreaks around the project bore-field stations, the ML boundary and internally, around the mine (MCoA 3.8(a), section 6.4.4 of the EIS and the Bland Shire Local Disaster Plan).	The bushfire management measures carried out include: • creation of firebreaks around the ML 1535 boundary by slashing and grading; • slashing of large open areas within ML 1535 with high fuel loads; • mowing and grounds maintenance of bore-field stations; • conducting regular inspections of the ML 1535 area to identify any significant fire risks.
s.6.3/p17	Barrick will minimise removal of trees and vegetation and restrict clearing to areas occupied by mine activity, buildings, paved surfaces and areas necessary for fire control in accordance with the NVC act and MLRVMP with regard to fuel management work. (MCoA 3.1(B)).	Development of the CGM on ML 1535 has occurred with removal of trees and other vegetation restricted to areas required for by mine activity, buildings, paved surfaces and areas necessary for fire control.
s.6.3/p17	No disturbance of Belah Woodland in the DA area occurs and soil stockpiles should not be located in Wilga Woodland as identified in Figure 3-13 of the EIS (MCoA 3.1c and 3.1 (D)).	No disturbance of Belah Woodland has occurred with the development of the CGM.
s.7.1/p19	A fire hazard reduction audit of Barrick-owned lands will be conducted annually, in consultation with the NSW RFS to identify hazard reduction methods to be adopted on Barrick-owned lands each season.	A review of fire hazard across the Barrick owned lands is conducted annually to identify hazard reduction works required.
s.7.1/p19	A general hazard audit of the project will be conducted in accordance with hazardous industry planning and advisory paper no. 5 "Hazard Audit	A Hazard Audit is conducted by Dean Shewring of Pinnacle Risk Management Pty Ltd each 3 years.

Section/ Page No.	Bushfire Management Plan Commitments	Comments
	Guidelines" 12 months after commencement of operations and every three years thereafter (MCoA 5.4(e)).	The initial Hazard Audit was conducted 12 months after commencement of operation of process plant (i.e. April 2007), a second Hazard Audit was conducted on 19-22 April 2010 and a third Hazard Audit was conducted on 8-12 April 2013.
s.7.2.1/p19	The width of firebreaks will be equivalent to adjoining tree height, where practicable, to account for the majority of short distance spotting for low and moderate fires. Firebreaks will be maintained by a combination of slashing or grading, and by spraying or cultivation. This approach to firebreak location and maintenance has been agreed by the BSC and NSW RFS and is considered adequate.	Firebreaks are established and maintained in accordance with these requirements and are entered onto the firebreak location register for maintenance to the satisfaction of BSC and NSW RFS.
s.7.2.1/p19	Firebreak maintenance will be undertaken as determined by monthly inspections and maintenance works will be recorded on the Fire Trail Register.	Regular inspection of firebreaks occurs by the CGM personnel and maintenance is conducted as required to ensure the fire breaks meet BSC and NSW RFS requirements.
s.7.2.3/p20	General fuel management measures and fire hazard reduction (e.g. grazing, mulching, slashing etc) will be implemented in accordance with the requirements of annual hazard reduction audit.	Fuel management by means other than burning have been implemented by CGM including grazing, slashing, pruning, mulching or other operations (e.g. ploughing, herbicide application and rolling).
s.7.2.3/p20	The Fire Safety Study, Hazard and Operability Study and Final Hazard Analysis will be conducted to assess and manage "offsite risk to people and the biophysical environment" (MCoA 5.4(a)).	A Fire Safety Study prepared by Pinnacle Risk Management for CGM was submitted to the Commissioner of the NSW Fire Brigade and DIPNR for approval in Dec 2004 in accordance with MCoA 5.4. A Hazard and Operability Study prepared by Aker Kvaerner Australia Pty Ltd for the main plant area was submitted to DIPNR in Dec 2004. The Final Hazard Analysis was submitted to DIPNR on 22 Dec 2004 and approved in March 2005.
s.10/p23	An AEMR will be prepared in accordance with the requirements of project MCoA 9.2 and DMR requirements and submitted to the director general. Bushfire related issues to be reported in the AEMR.	Annual Environmental Management Reports (AEMR) prepared by CGM in accordance with Development Consent 14/98 condition 9.2 includes bushfire management and actions in AEMR section 3.16.

4.9.2 Conclusion

The Bushfire Management Plan and Memorandum of Understanding with the NSW Rural Fire Service provide a sound basis for the management of CGM MLA and Barrick owned land in relation to control of vegetation fuel sources and fire-fighting ability by the CGM staff. CGM has dedicated fire and hazard response equipment housed in the Emergency Response / Rescue Station located near the administration block, process plant and maintenance facilities on the site.

4.10 Land Management

[Development Consent 14/98 MOD 11 condition 3.7]

4.10.1 Land Management Plan

[Development Consent 14/98 MOD 11 condition 3.7]

A Land Management Plan was prepared to satisfy the consent conditions and approved by the Director-General in 2003. The Land Management Plan outlined the management strategies and measures for all of the Barrick land holdings and was reviewed following each modification.

An addendum to the Land Management Plan was being prepared to satisfy Development Consent 14/98 MOD 11 condition 3.7 at the date of this audit (April 2015) for submission to DP&E in May 2015.

The Commitments outlined in the Land Management Plan are summarised in Table 12.

Table 12: Land Management Plan Commitments

Section/ Page No.	Land Management Plan Commitments	Comments
P11/s.3.2	Barrick-owned land outside the project area will continue to be utilised for farming / agricultural production by Barrick and/or licensees that sign agreements to conduct agricultural activities on Barrick-owned land	Management of Barrick owned land outside the ML 1535 area is arranged through agreements with specific farmers and/or organisations.
P13/s.4.1	The relocated TSR will be separated by fencing from Barrick's mining operations to ensure the unimpended movement of stock in the relocated reserve. Pastures on the relocated TSR will be managed by the CRLPB	The relocated Travelling Stock Route is separated from the CGM ML 1535 boundary with fencing that restricts movement of stock onto the ML area but does not restrict stock movement on the relocated TSR.
P14/s.4.3	Barrick will manage stock in enhancement areas in order to encourage the natural regeneration of native plant species as recommended by the LWMPLC, MLRVMP, JLWMP and the NSW Wetlands Management Policy through fencing control and the application of grazing management.	Four exclusion fences are established around the remnant vegetation areas on the Hillgrove property to assess the long term impact of kangaroos on pasture. Additional fencing has also been erected on the Thornton and Lake Cowal properties to reduce the impact of sheep grazing on remnant vegetation.
P14/s.4.3	Barrick will require Licensees of each property to prepare a Farm Management Plan. If in the future Barrick intended to farm these properties then a farm manager would prepare plans, to cover all Barrick owned property	A Farm Management Plan has been prepared for the 'Lake Cowal" property dated 13 March 2013. Other Barrick owned properties are being rested and a Farm Management Plan will be prepared for each when they become active again for grazing or cropping.
P15/s.4.4	Barrick-owned land will be managed to avoid overgrazing and subsequent damage to native pastures. This will be achieved by implementing a Tactical Grazing approach as described in Section 4.3	Implementation of tactical grazing with 'crash grazing with sheep and cattle' has occurred to minimise fire risk at Hillgrove, Lakeside, Lake Cowal and Thornton.
P15/s.4.5	Paddocks requiring pasture renovation or re-establishment and those paddocks suitable for harvesting of the aforementioned pasture	Pasture renovation or re-establishment, and paddocks suitable for harvesting

Section/ Page No.	Land Management Plan Commitments	Comments
	seeds will be identified. Fertilisers and tillage techniques may be utilised on improved pastures. Direct drilling and minimum tillage techniques will be preferentially used to minimise soil disturbance and fertilisers may be applied periodically to improve soil fertility. The Tactical Grazing approach will be implemented for improved pastures on Barrick-owned land.	have been implemented at Hillgrove and Corringle properties.
P15/s.4.6	Areas of Barrick-owned land will continue to be available for pastures and other agricultural uses following mine closure. The areas available for different types of land-use will be determined by land ownership and consultation and agreements with regulatory agencies	To be determined following mine closure by land ownership and consultation and agreements with regulatory agencies.
P16/s.5.1	In accordance with consent condition 3.4(a)(vii) which requires the protection and enhancement of existing retained habitats within the mining lease area and 3.1(B) which requires the minimisation of removal of trees and other vegetation from the mine site, a Vegetation Clearance Protocol (VCP) has been developed for the Project. All vegetation clearance activities required by the project will be conducted in accordance with the VCP.	The Vegetation Clearance Protocol is implemented prior to any vegetation disturbance on any area within the MLA where clearance is proposed. Exclusion fences have been established around the remnant vegetation area on the Hillgrove property to assess the long term impact of kangaroos on pasture, and additional fencing has also been erected on the Thornton and Lake Cowal properties to reduce the impact of sheep grazing on remnant vegetation.
P16/s.5.1	In accordance with consent condition 3.1(B) and the FFMP, clearance activities within the mining lease area will be restricted to the areas occupied by mine activities, buildings and paved surfaces, and those necessary for fire control. The VCP is consistent with the JLWMP and LWMPLC to minimise vegetation clearance in the region.	The Vegetation Clearance Protocol is implemented prior to vegetation disturbance on any area where clearance is proposed, to ensure clearance activities within ML 1535 are restricted to the areas required for mine activities.
P16/s.5.2	In accordance with consent condition 3.1c and the FFMP, topsoil stockpiles within the ML will not be located within any area of the remnant Wilga Woodland. Avoidance of Wilga areas within the ML will reduce the area of some soil stockpiles in comparison to the stockpiles shown on Figure 5-2 of the Project Environmental Impact Statement (EIS)	No soil stockpiles have been located within any area of remnant Wilga Woodland.
P17/s.5.3	A number of management measures will be implemented within the compensatory wetland and remaining areas of wetland within ML1535 including: prevention of livestock from entering the enhancement areas to encourage the natural regeneration of native plants; measures to minimise the spread of weeds and competition with native flora; measures to	Management measures to protect the compensatory wetland areas have been implemented in accordance with the Compensatory Wetland Management Plan.

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	minimise the occurrence of feral pests; and limiting vehicular access.	
P19/s.5.4.1	In order to encourage the natural regeneration of native plant species, livestock will be controlled in enhancement areas 1 to 4 through fencing control and management. The management of livestock will vary between enhancement areas, as outlined in Table 1 (LMP).	Presence of livestock in the enhancement areas is controlled with fencing and farm management practices.
P20/s.5.4.1	Selective planting of native vegetation may be conducted in enhancement areas 1 to 4 to increase the quantity of remnant vegetation and to link areas of existing remnant vegetation, where practicable. Livestock will be prevented from entering any portions of the enhancement areas which have been revegetated with native plant species.	Livestock are prevented from entering any portions of the enhancement areas that have regenerated with native plant species, by fences erected by CGM.
P21/s.5.4.1	Revegetation activities will be implemented by a suitably qualified person(s) and coordinated by the Environmental Manager.	Revegetation activities in the remnant vegetation areas, is managed in co-operation with the Lake Cowal Foundation and DnA Environmental.
P21/s.5.4.2	Remnant vegetation monitoring will be conducted within the enhancement areas to: assess the progress of natural regeneration; determine whether vegetation planted within the enhancement areas is establishing; and determine the need for any maintenance and/or contingency measure (such as the requirement for revegetation, supplementary plantings and weed control).	Remnant vegetation monitoring is conducted annually by DnA Environmental to assess the status of the vegetation and determine the need for any maintenance and/or contingency measures in relation to the regeneration.
P21/s.5.4.2	A number of survey plots (50 x 20 m) will be established within each enhancement area to obtain quantitative data on species and abundance.	A research study of native grass recruitment utilising pasture cropping trials was set up on the Hillgrove property as a University of Sydney honours project. These trials were conducted and funded through the Lake Cowal Foundation.
P21/s.5.4.2	Visual observations will be made on a regular basis of areas revegetated with native plants to assess the establishment and the health of planted vegetation. This information will be utilised to determine the need for any supplementary plantings that may be required.	Remnant vegetation monitoring has been conducted annually by DnA Environmental since 2008. Reports have been prepared describing the status of the vegetation in each survey plot, with photo points established for each quadrat for recording the annual appearance.
P24/s.6.2	In accordance with BSC advice, Barrick will control weed species (African Boxthorn, Johnston Grass, Scotch/Illyrian Thistle, Silverleaf Nightshade, Spiny Burrgrass, St. Johns Wort, Wild Rash) in accordance with the Lachlan Valley Noixous Weeds Advisory Group weed management plans. The weed	Annual weed surveys and farm management assessment was conducted by Carnegie Natives until 2014 and by ngh environmental since March 2015. The latest survey showed Galvanised Burr to be the predominant weed species with African Boxthorn appearing to be in

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	management plans are provided in LMP Appendix B.	decline. *Lippia*, a Class 4 noxious weed, has been observed on one of the leased farms. On-going weed control measures are carried out on a daily or weekly basis as required.
P24/s.6.4	Preventative measures will be implemented on Barrick-owned land related to movement of stock, use of locally sourced stock feed, reduction of on-farm weed sources.	Restriction/management of stock movements, select stock feed purchases, and physical and/or chemical weed control measures are being employed by Barrick with an ongoing regular program.
P25/s.6.5	Physical removal and chemical application are the main weed control measures to be applied.	
P26/s.6.6	Barrick-owned land will be surveyed for weeds annually. Follow up inspections will also be made of specific areas following the implementation of weed control measures (to assess the success of the weed controls).	Annual weed surveys and farm management assessments have been conducted by Carnegie Natives and by ngh environmental since March 2015. Due to above average rainfall during 2010-11, exceptional growth of problem species occurred including South African Box Thorn, Bathurst and Galvanised Burr, Scotch Thistle, St John's Wort, Purple-Flowered Devil's Claw and St Barnaby's Thistle.
P26/s.6.6	The BSC will be consulted for the suitable control of any new noxious weed species if encountered in the protect area to meet the requirements of the Noxious Weeds Act, 1993.	Consultation with BSC would occur if any new noxious weed species are encountered on the Barrck owned properties. . Consultation is expected to occur with BSC following the recent discovery of *Lippia* on a leased farm (March 2015).
P28/s.7.2	Barrick will undertake pest control operations in conjunction with adjacent landholders in accordance with CRLPB and NSW Agriculture recommendations and regular consultation with the CRLPB and NSW Agriculture (prior to and following annual pest inspections) and local landholders and landholder groups through the CEMCC process.	A regular control program for foxes is conducted. Rodent control was implemented during 2011-2012 on the ML 1535 area and Barrick owned land. Control of spiders and black crickets has also occurred at 3 to 6 monthly intervals.
P28/s.7.2	Barrick personnel responsible for land management will use the Vertebrate Pest Control Manual Appendix C (NSW Agriculture, 2003b) as a guide for pest control activities on Barrick-owned land in consultation with the CRLPB and NSW Agriculture.	Use of the NSW Agriculture Vertebrate Pest Control Manual for pest control activities occurs as necessary.
P30/s.8.2	Barrick will aim to prevent land degradation and rehabilitate previously degraded land or land affected by their activities where practicable. This aim is in accordance with the principles of the MLRVMP, JLWMP and LWMPLC to reduce soil erosion and damage to soil characteristics.	Rehabilitation of previously degraded land or land affected by Barrick activities occurs as practicable in accordance with the Land Management Plan.

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P30/s.9.1	Mine rehabilitation works will be undertaken progressively as construction activities and mining proceed, in accordance with MCoA 3.6 and Section 5 of the EIS.	Rehabilitation trials as part of the progressive rehabilitation program have been undertaken on the disturbed areas of the ML 1535 site.
P31/s.9.2	Barrick will develop a strategy for the long-term (ie post mine closure) land-use of its landholdings, including the project area…..The strategy for long-term land-use of the project area and Barrick-owned land will be submitted by year 7 of mining operations or five years before mine closure, whichever is the earlier. The strategy will be developed in consultation with the DIPNR, EPA, NPWS, BSC, the CEMCC, and to the satisfaction of the D-G.	The long-term land-use strategy of the ML 1535 area and Barrick-owned land will be submitted five years before mine closure. The strategy will be developed in consultation with the DIPNR, EPA, NPWS, BSC, and CEMCC, with land owners and consultation and agreements with regulatory agencies.
P35/s.12	Prepare AEMR in accordance with the requirements of consent condition 9.2 and DMR requirements and submitter to the Director-General.	Annual Environmental Management Reports (AEMR) have been prepared by CGM in accordance with MCoA 9.2. Land management issues are reported in the AEMR sections: • Section 5 Barrick-owned land under license agreements • Section 3.9 weed and pest control • Section 3.7 – Flora - remnant vegetation management monitoring

4.10.2 Remnant Vegetation Enhancement Program

DnA Environmental has conducted annual remnant vegetation enhancement monitoring for the CGM site. Permanent monitoring sites were established in areas of remnant woodland to measure a range of ecological features and track these changes as part of the Remnant Vegetation Enhancement Program (RVEP). Many sites have been inaccessible since the flooding of Lake Cowal in 2010, so only six RVEP sites were assessed during November 2014 survey (Hill01, Hill02, Hill03, Hill04, RVEP3 and RVEP RVEP4).

The DnA Environmental *Rehabilitation Monitoring Report*, January 2015 commented as follows:

> *"In 2014 there was below average rainfall for much of the year. Subsequently the water in Lake Cowal receded significantly, with no ponded water between the CGM permanent and temporary isolation bunds and all gilgais were dry. In the months preceding the annual monitoring program, monthly rainfall was particularly low which resulted in limited active plant growth and low floristic diversity. This was reflected across the range of CGM monitoring sites this year.*
>
> *While in previous years many of the exotic species were also recorded in the reference sites, and are a reflection of the disturbance history of the Lake Cowal environment, the very dry conditions have restricted the live plant diversity to those that are perennial and very hardy, with only a few exotic annuals persisting in moist depressions. This has resulted in an obscured representation of the diversity of species and which would be significantly different earlier in the year or under better seasonal conditions and in most cases vegetation on rehabilitation areas have germinated from seed stored in the soil seed bank."*

4.10.3 Conclusion

The Land Management Plan prepared to satisfy MCoA 3.10(A)(i) provides the basis for the long term management of the disturbed areas of ML 1535 and collates many of the commitments in other plans that also have associated long term management and rehabilitation strategies / processes for the ML are (e.g. Flora and Fauna Management Plan, Remnant Vegetation Enhancement Program, Rehabilitation and Offset Management Plan, Compensatory Wetland Management Plan etc).

The monitoring surveys conducted during 2014 and 2015 have shown the effects of the meteorological conditions (mainly associated with rainfall) on the diversity and establishment of species across the CGM site and surrounding Barrick owned land.

4.11 Water Management

[Development Consent 14/98 MOD 11 condition 4.1/4.2]
[Development Consent 14/98 MOD 11 condition 4.1 to 4.6]

4.11.1 Regional Hydrology

The CGM is located on the western side of Lake Cowal an ephemeral, fresh water lake. The area surrounding the CGM site is drained by ephemeral drainage lines that flow to Lake Cowal. The lake remained dry from 1998 until mid-2010, when the lake began to fill. Lake Cowal is in the lower reaches of the Bland Creek catchment and it also receives periodic inflows from the Lachlan River during periods of high flow when flood waters enter Lake Cowal via two main breakout channels:

- Bland Creek, an ephemeral waterway drains into the lake at its southern end; and
- Lachlan-Lake Cowal floodway to the north-east; when breakout flows from the Lachlan River are directed (during floods) into the north-east section of Lake Cowal.

Breakout from the Lachlan River to Lake Cowal occurred in late 2010 and in the first half of 2012.

When full the lake covers an area of approximately 10,500 ha and holds 150,000 megalitres (ML) of water with an average depth of 2.5 m. Lake Cowal overflows to Nerang Cowal, a smaller lake to the north. When flows are sufficient, the lakes ultimately overflow and drain into the Lachlan River via Bogandillon Creek. Flows in the Lachlan River are regulated by releases from the Wyangala Dam.

4.11.2 CGM Water Management

[Development Consent 14/98 MOD 11 condition 4.1/4.2]
[Development Consent 14/98 MOD 11 condition 4.4]

The Cowal Gold Mine was designed and developed to manage surface water runoff and quality:

- Surface water on the mine site is permanently isolated from Lake Cowal by an up-catchment diversion system (UCDS), directing runoff from areas unaffected by mining around the perimeter of the site, and an Internal Catchment Drainage System (ICDS), capturing all site runoff and seepage for re-use in the processing plant.
- The operational water balance prediction for a moderately negative site water balance requires an external water supply that is primarily obtained from the Bland Creek Palaeochannel Borefield.

- Mine waste rock material has the potential to generate moderately saline seepage and all runoff and seepage from the waste rock emplacements is contained within the ICDS.
- The tailings storages have been designed to contain runoff from a 1 in 1,000 year average recurrence interval (ARI) rainfall event. Any spill or seepage would be contained within the ICDS, ultimately reporting to the open cut.
- Use of suitable soils and vegetation in rehabilitation of waste rock emplacements and the tailings storages are predicted to result in low salt fluxes in surface waters consistent with regional runoff water quality.

4.11.3 Water Management Plan

[Development Consent 14/98 MOD 11 condition 4.1/4.2]
[Development Consent 14/98 MOD 11 condition 4.4]

A Site Water Management Plan prepared to satisfy the requirements of Development Consent 14/98 condition 4.1, and approved by DIPNR in 2003. The Plan was subsequently amended in November 2004 and December 2006. A further review of the Plan was undertaken in 2009 and a revised Plan developed to reflect the approved Modifications to the Development Consent. The revised Plan included changes to site water management, water supply and associated monitoring (e.g. water supply description, water supply schematic and groundwater monitoring, including the saline groundwater supply bore-fields); application of schematic programs to reflect the revised Surface Water, Groundwater, Meteorological and Biological Monitoring Programme (SWGMBMP) and incorporation of measures to evaluate water quality data obtained from monitoring as required by Development Consent MOD 10 condition 8.2(a)(iii).

A consolidated revision of the Site Water Management Plan was completed in November 2010 following receipt of comments from NoW and DECCW. Revised Site Water Management Plans were submitted to DP&I on 17 February 2012 and August 2013 and the requirements of these revised plans were implemented for the operation of the mine.

A Water Management Plan prepared to satisfy Development Consent 14/98 MOD 11 condition 4.4 has been prepared for submission to DP&E by 30 May 2015.

Commitments in the current Water Management Plan (2013) are listed in Table 14.

Table 14: Site Water Management Plan Commitments.

Section / Page No.	Site Water Management Plan Obligations (2013)	Comments
s.4/p.22	The Up-catchment Diversion System and Internal Catchment Drainage System provide for the diversion of upper catchment runoff and the containment of potentially contaminated water respectively.	The Internal Catchment Drainage System (ICDS), Up-Catchment Diversion System (UCDS), and settlement ponds were constructed in 2004 in accordance with the Site Water Management Plan.
s.4/p.22	Surface waters that collect within the Internal Catchment Drainage System will be managed by a series of contaminated water storages, bunds and drains. Internal Catchment Drainage System contained water storages for CGM runoff comprise	Construction of the D1 and D4 water storages commenced during 2004 and were completed by January 2005. Water management pond D5 was completed adjacent to the process plant area in 2005. Toe drains and contained water storages, D2, D3, D8A and D8B were constructed in stages

Section / Page No.	Site Water Management Plan Obligations (2013)	Comments
	storages D1, D2, D3, D4, D5, D8A and D8B. Contained water storages D1 to D5, D8A and D8B will be used to contain runoff from the waste emplacements and general site area. Water will be pumped to contained water storages D6 or D9 (process water storages) for consumption during ore processing.	around the waste emplacements and ore stockpile areas between 2005 and 2007. Water management pond D9 for temporary storage of water to supplement the bore water supply, was commissioned in June 2007. Permeability criteria for all water management ponds were approved by DEC/DSC.
s.4/p22	Residual cyanide levels in storage D6 are expected to be well below those levels expected in the tailings storage facilities. Recycled waters from the tailings thickener will go directly to the mill.	Monitoring of cyanide in the discharges to the tailings storage facility is conducted twice daily and has exhibited CN_{WAD} levels of less than 20mg/L. Cyanide levels in the D6 storage are also less than the 20mg/L CN_{WAD} levels.
s.4/p23	D9 will contain make-up water from the Jemalong irrigation channels and the Bland Creek Palaeochannel bore-field, groundwater, site catchment water, pit dewatering water and incidental rainfall, but will not contain supernatant water from the tailings storage facilities. Water within contained water storage D9 will be pumped to D6 as required.	Water management pond D9, commissioned in June 2007, is used for temporary storage of water to supplement the bore water supply for the project and provide certainty of water supply for the process plant needs. Pond D9 holds approximately 641.4 ML of groundwater (from the Bland Creek Paleochannel, saline groundwater de-watering / supply bore-fields and rainfall) and surface water (Regulated River water).
s.4/p23	The contained water storages will be managed in such a manner to minimise potential water quality impacts. Containment storages will be sized to contain all water to at least a 1 in 100 year average recurrence interval (ARI) rainfall event (or a 1 in 1,000 year ARI rainfall event for those storages containing runoff from the plant site and tailings storage facilities).	The contained water storages are sized to contain all water to at least a 1 in 100 year average recurrence interval (ARI) rainfall event (or a 1 in 1,000 year ARI rainfall event for those storages containing runoff from the plant site and tailings storage facilities).
s.4/p24	Management of the quantity and quality of groundwater within and around the mine site is primarily related to the operation of the Bland Creek Palaeochannel bore-field and saline groundwater supply bore-field and the pit dewatering system designed to isolate saline groundwater and manage industrial and river salinity as described in the ESCMP.	The site water management system is designed to contain and manage saline surface water, and manage industrial and river salinity as described in the ESCMP.
s.4.1/p26	The lake protection bund, site water and tailings storage facilities will be constructed to the requirements of the OoW, OEH and DSC (MCoA 4.1/4.2(c)(i)).	The lake protection bund, site water and tailings storage facilities were constructed in accordance with the requirements of the DLWC, EPA and DSC during 2004.
s.4.1.1/p28	The Up-catchment Diversion System will be constructed to simulate	The up-catchment diversion system was constructed to simulate endemic drainage

Section / Page No.	Site Water Management Plan Obligations (2013)	Comments
	endemic drainage features that are known to be stable in the prevailing hydrological regime. Riparian vegetation will also be incorporated into the proposed diversion system (Gilbert and Sutherland, 1997).	features of the prevailing hydrological regime. The up-catchment diversion system was constructed with rock stabilisation barriers to control flow rates down the channel following rainfall events.
s.4.1.2/p28	The lake isolation system was designed to hydrologically separate the open pit and Lake Cowal (North Limited, 1998a)……	The constructed lake isolation system comprises an isolation embankment designed to prevent the inflow of water from Lake Cowal to the open pit development area during periods of high water levels. The lake isolation system comprises: • temporary isolation bund; • lake protection bund; and • perimeter waste emplacement.
 **Cowal Gold Mine pit showing temporary isolation bund, lake protection bund and perimeter waste emplacement**.		
s.4.1.2/p29	The temporary isolation bund is a short-term feature that will be used to isolate the pit from the lake during the construction phase while the lake protection bund is constructed. Accordingly, once the lake protection bund is constructed and revegetated, the isolation function of the temporary isolation bund will be superseded (North Limited, 1998a).	The temporary isolation bund was constructed in 2004 to isolate the pit from the lake waters (if the lake filled during this construction period), while the lake protection bund was constructed.
s.4.1.2/p30	The lake protection bund is a low permeability embankment designed to prevent water inflow (during periods of high lake water level) from the lake into the open pit development area over the life of the mine and over the long term (North Limited, 1998a).	The lake protection bund was constructed to prevent water inflow (during periods of high lake water level) from the lake into the open pit development area. The bund has been shaped and has revegetated with grass and low growing native vegetation stabilising the surface soils.
s.4.1.2/p31	The perimeter waste emplacement will be constructed to RL 223 m and will surround the pit to the north, east and south. The emplacement will be	The perimeter waste emplacement was constructed to RL 223m to the north, east and south of the CGM pit. The emplacement is located behind the lake protection bund.

<table>
<tr><th>Section / Page No.</th><th>Site Water Management Plan Obligations (2013)</th><th>Comments</th></tr>
<tr><td></td><td>located behind the lake protection bund and will be constructed from oxide mine waste rock with the outer face constructed from low salinity topsoils/soils.</td><td></td></tr>
<tr><td>s.4.1.3/32</td><td>During the construction and operation of the CGM surface water collected within the limits of the Internal Catchment Drainage System will be directed to the process water storage dam (D6) for use (as raw water, dust suppression and conditioning of construction materials) in the process plant.</td><td>Surface water collected within the limits of the Internal Catchment Drainage System (ICDS) is directed to the process water storage dam (D6) for use in the process plant.</td></tr>
<tr><td>s.4.1.4/p32</td><td>The CGM integrated erosion, sediment and salinity control system is presented in the ESCMP and is designed to prevent the discharge of sediment-laden runoff from the mine site to the lake (Barrick, 2003).</td><td>The quantity and quality of surface water runoff from mine landforms and disturbed areas is managed through the sizing of sediment control structures (as described in the Erosion and Sediment Control Management Plan).</td></tr>
<tr><td>s.4.2.1/40</td><td>The quantity of water approved for extraction from the Bland Creek Palaeochannel is 15ML/d and 3,650 ML/annum (Development Consent 14/98 condition 4.4(a)).</td><td><table><tr><th>Year</th><th>Annual Water extraction from Bland Creek Palaeochannel Bore-field</th></tr><tr><td>2014</td><td>1317 ML</td></tr><tr><td>2013</td><td>1379 ML</td></tr><tr><td>2012</td><td>1080 ML</td></tr><tr><td>2011</td><td>696 ML</td></tr><tr><td>2010</td><td>1089 ML</td></tr><tr><td>2009</td><td>2053 ML</td></tr><tr><td>2008</td><td>1658 ML</td></tr></table>The water extraction from the Bland Creek Palaeochannel bore-field has not exceeded 15 megalitres (ML)/day or 3650 ML/year, between 2006 and 2015.</td></tr>
<tr><td>s.4.2.1/p42</td><td>All bores from the Bland Creek Palaeochannel bore-field will be metered to ensure that the quantity of groundwater extracted from the Bland Creek Palaeochannel bore-field does not exceed the above limits.</td><td>The quantity of groundwater extracted from bores in the Bland Creek Palaeochannel bore-field, is metered and records the daily and annual extraction rates.</td></tr>
<tr><td>s.4.2.1/p45</td><td>The saline ground water supply bore-field would be operated during times when the bore-field is not inundated by Lake Cowal.</td><td>Two saline groundwater supply bores (WB01 and WB20) established during 2008 were approved as production bores by NoW (Water Licenses No. 70BL233231 and 70BL233233) in 2010.
No extraction from the saline groundwater bores has occurred since April 2010 during the inundation of Lake Cowal.</td></tr>
<tr><td>s.4.2.2/p48</td><td>Waters that accumulate within the open cut will be managed in accordance with a pit dewatering</td><td>The open pit dewatering bore-field was established external to the perimeter of the CGM E42 Pit.</td></tr>
</table>

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	program. The catchment area draining to the open pit during operation will be restricted to the pit itself and a small perimeter area enclosed by an external bund. Saline groundwater generated during open pit dewatering is pumped to the process plant for use in ore processing. The open pit design includes water management structures (face seepage collection drains) and in-pit sumps in the floor of the pit. A network of piezometers has also been installed to monitor drawdown levels during the life of the mine.	The water extracted from the dewatering bore-field was mainly used in the process plant for ore treatment via Pond D6 or for dust control on E42 Pit and TSF haul roads.
 **CGM open pit dewatering sump. The dewatering borefield is located around the perimeter of the open pit.**		
s.4.2.5/p52	The process plant area has been bunded and graded such than any surface runoff, accidental spills of processing water or other potentially hazardous liquids will report to contained water storage D5.	The process plant area is bunded and any surface runoff, accidental spills of processing water or other potentially hazardous liquids report to contained water storage D5.
s.4.2.7/p53	Tailings storage facility water management at the CGM will continue to involve maximising water re-use through the under-drainage pipe network, decant towers and water return pipeline to the contained water storage (D6).	Reuse of supernatant water from the tailings storage facilities is maximised by recovery from the decant towers with the water returned to water storage D6 adjacent to the process plant, for reuse.
s.4.2.7/53	Monitoring of EC and pH in the decant of the active tailings storage facility would be undertaken on a weekly basis.	Weekly monitoring of pH and EC occurs at the decant tower of the active tailings storage facility.
s.4.2.8/p54	A site sewage treatment facility has been installed. Treated sewage and sullage will continue to be disposed of to the satisfaction of Bland Shire Council (BSC) and the OEH and in accordance with the requirements of the NSW Department of Health (In accordance with Development Consent Condition 5.6).	The permanent on-site sewage management system was installed west of the Mine Workshop in the 1st quarter 2006, in accordance with the requirements of the Department of Health.

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s.4.3/p54	Sampling, handling and dispatch of all samples will be undertaken by suitably qualified and experienced staff or consultants to the satisfaction of the DP&I and OEH in accordance with Development Consent 14/98 MOD 10 condition 2(a)(iii). The type of sampling equipment and sample containers and the requirement for use of preservative will be in accordance with Section 4 of the relevant Part (Parts 4, 6, 10 and 11) of AS/NZS 5667: 1998.	Collection and transport of samples to ALS (NATA registered laboratory) for analysis is conducted using sample containers and preservation requirements in accordance with AS/NZS 5667: 1998 Section 4, Parts 4, 6, 10 and 11, relevant to the parameters to be measured. All samples are collected and transported to the NATA registered laboratory using Chain-of-Custody controls.
s.4.3.1/p56	Meteorological monitoring will continue for the duration of the CGM to provide site specific meteorological data for the on-going assessment of the site's water balance and effectiveness of relevant impact mitigation strategies (Development Consent 14/98 MOD 10 condition 8.1).	The data from the meteorological station is available on the CGM computer network and is available to CGM personnel. The meteorological station is maintained and calibrated quarterly by Sentinel Pty Ltd.
s.4.3.2/p57	Surface water monitoring will continue to be undertaken at monitoring sites along the six transects used during the baseline monitoring program (described in the SWGWBMP) to enable evaluation of water quality data against records of baseline monitoring, in accordance with MCoA 4.1/4.2(a)(viii). Monitoring will be conducted at the monitoring locations when the water level in Lake Cowal is at or above 204.5 m AHD.	The surface water monitoring program has occurred with collection of water samples along transects in the Surface Water, Groundwater, Meteorological and Biological Monitoring Program when the water level in Lake Cowal was above 204.5 m AHD. EPL 11912 was varied on 21 May 2014 to align condition M2.4 for Points 14, 15, 16, 17 and 18 to Lake level of 204.5 m AHD. (Where practical Barrick has continued to take surface water samples below 204.5 m AHD).
s.4.3.2/p59	Monitoring data will be entered on to the CGM monitoring database to assist reporting (such as AEMR reporting) and enable trends to be easily identified.	All monitoring data collected by CGM is entered into the Barrick database system where the data is retained for reporting and filing. This system also generates reports as required within Barrick and monitoring reports for the AEMR/ Annual Review, EPA/ DECC/OEH, DP&E and DRE.

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s.4.3.3/p59	Groundwater monitoring will continue to be undertaken at monitoring sites used during the baseline monitoring programme (described in the SWGWBMP) (where those sites are still operational) in accordance with Consent Condition 4.1/4.2(a)(viii).	Groundwater monitoring is undertaken at monitoring sites used during the baseline monitoring program (where those sites are still operational). NOW and EPA were consulted regarding the location of the CGM groundwater monitoring locations.
s.4.3.3/p60	Groundwater monitoring commenced upon licences being obtained under Part 5 of the *Water Act, 1912* (NSW).	Licence for the groundwater monitoring bores was obtained under Part 5 of the *Water Act*, 1912.
s.4.3.4/p62	The biological monitoring program has been developed in consultation with and to the satisfaction of DPI-Fisheries, considering the recommendations and implications of the IMP and Goldney et al. (1997).	The biological monitoring program is described in the Surface Water, Groundwater, Meteorological and Biological Monitoring Program.
s.4.3.6/p64	Development Consent 14/98 MOD 10 condition 8.2(a)(v) requires the preparation of a monitoring program for the detection of any movement of the lake protection bund, water storage and tailings structures and pit/void walls during the life of the CGM, with particular emphasis on monitoring after any seismic events.	This program was prepared prior to the commencement of construction in consultation with the NOW and DTIRIS-DRE. The program for the detection of any movement in the lake protection bund, water storage and tailings structures and pit/void walls was approved by the Director-General on 9 October 2003. Survey points in the Lake Protection Bund (located every 200m on top of the banks) were installed in accordance with the program. No significant movement has been recorded at any of the monument survey points.
s.5.3.2/p70	The operation phase water management measures to be adopted to prevent the degradation of waters within Lake Cowal will also be effective in preventing the degradation of surface waters outside the Internal Catchment Drainage System.	Operations are carried out in a manner that does not cause, water pollution (including sedimentation) or soil contamination or erosion, in accordance with an approved MOP (Condition 14 of the Conditions of Authority).
s.6.1/p.72	Water from the Lachlan River would continue to be accessed for the CGM by purchasing temporary water available from the regulated Lachlan River trading market.	Water has been purchased from the Lachlan Regulated River Water Source under Water Access Licences (WAL) obtained by Barrick.
s.6.2.2/p74	The groundwater resource contained within the Bland Creek Palaeochannel is currently partially utilised by land holders in the area for irrigation and stock watering purposes. To monitor important background and predicted future water level draw-downs, monitoring piezometers will be installed. (The actual number and location of piezometers is presented in SWGMBMP).	In the event that the groundwater level in GW036553 is below RL 137.5 mAHD, one or more of the following contingency measures would be implemented in consultation with the NOW: • investigate the groundwater level in the Trigalana bore (GW702286) or any other impacted stock and domestic bores; • determine the pump setting in relevant stock and domestic bores;

Section / Page No.	Site Water Management Plan Obligations (2013)	Comments
	In the event that disruption to the efficiency of the closest registered stock and irrigation bores occurs, as indicated by monitoring, ameliorative measures will be implemented).	• determine the drawdown rate in GW702286 and other impacted stock and domestic bores; • develop an impact mitigation plan for impacted stock and domestic bores; and/or • set up an alternative water supply for the owner of GW702286 and other owners of stock and domestic bores, if necessary. In the event that the groundwater level in GW036553 was below RL 134 m AHD, one or both of the following contingency measures would be implemented in consultation with the NOW: • alter the pumping regime to maintain the water level in the impacted stock and domestic bores; or • maintain a water supply to the owner/s of impacted stock and domestic bores.
s.6.2.2/p75	The groundwater level associated with the Bland Creek Palaeochannel Bore-field is monitored on a continuous basis by OoW's groundwater monitoring bore on Burcher Road (GW036553). Contingency measures have been developed for implementation when water levels reach either RL 137.5 m AHD or RL 134 m AHD. These trigger levels were developed in consultation with the OoW and other water users within the Bland Creek Palaeochannel including stock and domestic users and irrigators.	
s.7.3.2/p77	Barrick will provide compensation to affected landholders based on an assessment of the economic impact of any additional inundation of productive land. The long-term compensation package will be developed in consultation with the OoW and the OEH and to the satisfaction of the Director-General. Empirical data (e.g. measured changes to the Nerang Cowal flood regime and the consequent measured effect of the inundation of productive land) obtained from investigations undertaken to determine appropriate event based compensation will be utilised to determine an appropriate one-off long-term compensation package.	During 2010 Barrick met with landholders and developed short and medium to long term strategies for water management in the region. Components of the strategies were presented to the landowners with actions to be implemented agreed in consultation with the NOW. The water management strategies agreed with the landowners have been implemented by Barrick.
s.9/p81	In accordance with Development Consent Condition 4.5, there will be no disposal of water from the Internal Catchment Drainage System to Lake Cowal (Section 4.1.3).	No water from the Internal Catchment Drainage System enters Lake Cowal. All water in the Internal Catchment Drainage System is directed to storage ponds and reused on site in the process plant.
s.11/p.84	In accordance with Development Consent Condition 14/98 MOD 10 conditions 4.1/4.2(b) a strategy for the decommissioning of water management structures, including water storages both in and around the mine site, the water pipeline from the Bland Creek Palaeochannel bore-field, and the long term management of the	The decommissioning plan for the CGM Project will be prepared five years before mine closure.

Section / Page No.	Site Water Management Plan Obligations (2013)	Comments
	final void and lake protection bund will be submitted five years before mine closure in consultation with OoW, OEH, DTIRIS-DRE and CEMCC and to the satisfaction of the Director-General.	
s.12.2/p.85	The AEMR will be prepared in accordance with the requirements of the DTIRIS-DRE (Condition of Authority 26) (Section 2.1) and MCoA 9.2.	Annual Environmental Management Reports (AEMR) prepared by CGM in accordance with Development Consent 14/98 MOD 10 condition 9.2, include reporting of site water components in AEMR section 3.3.

4.11.4 Water Supply

[Development Consent 14/98 MOD 11 condition 4.1]
[Development Consent 14/98 MOD 11 condition 4.4]

4.11.4.1 Bland Creek Palaeochannel

[Development Consent 14/98 MOD 11 condition 4.4]
The Bland Creek Palaeochannel borefield (Bores PB1 to PB4) has supplied the majority of water required for the operation of the Cowal Gold Mine and process plant, with purchased water (delivery via the Jemalong irrigation channel), pit dewatering and captured surface run-off providing additional sources. The Bland Creek Palaeochannel borefield is located approximately 20 km to the east-northeast of the CGM site on the eastern side of Lake Cowal.

Development Consent condition 4.1(b) permits maximum daily water extraction from the bores (PB1 to PB4) of up to 15 ML/day and maximum annual extraction of up to 3,650 ML/year.

4.11.4.2 Eastern Saline Borefield

The Eastern Saline Borefield is located approximately 10 km east of the Lake Cowal eastern shoreline. Two (2) bores (SB01 and SB02) were drilled into the Cowra Formation within the Bland Creek Palaeochannel and are operated in accordance with Development Application (DA) 2011/0064 approved by the Forbes Shire Council. Building Certificates (No. 2010/0009a, b & c) were issued by Forbes Shire Council for the two groundwater production bores and buried water supply pipeline associated with the ESB.

4.11.4.3 Saline Groundwater Supply Borefield

[Development Consent 14/98 MOD 11 condition 4.4A]
In July 2008, two of four approved production bores (1535WB01 and 1535WB39), were drilled in the Cowra Formation, forming the saline groundwater supply borefield within ML 1535 to the south-east of the CGM open pit. Bore 1535WB20 was drilled and decommissioned with NOW Licensing, as it failed to yield and the bore was capped well before inundation of Lake Cowal in August 2010.

Water extraction from the saline groundwater supply is licensed by Water Access Licence (WAL) 31904 under Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources, 2012. WAL 31904 allows for an annual extraction limit of 3,660 units (~3,660 ML). (The two (2) existing saline groundwater supply bores were shut-down and capped when Lake Cowal became inundated in 2010).

4.11.4.4 Surface water sources within ML1535

Mine infrastructure and landforms were constructed within a contained catchment (i.e. the ICDS) of the Cowal Gold Mine development area. The ICDS combines with the UCDS and the lake isolation bund system to protect Lake Cowal from the Cowal Gold Mine development activities.

The lake isolation bund system comprises a temporary isolation bund and the permanent lake isolation protection bund. The lake protection bund comprises a large engineered embankment as a permanent barrier between the lake and the CGM open pit. Runoff from areas upslope of the ICDS (i.e. areas undisturbed by mining) is diverted via the UCDS, around the CGM to Lake Cowal.

The main water demand for the Cowal Gold Mine is for supply to the process plant. Since the commencement of primary ore processing in mid-2007, the water demand (total) has averaged 17.2 ML/day (of which up to approximately 8 ML/day was supplied by on-site recycling of return water and incident rainfall from the TSF decant ponds).

(The only other significant water demand for the operation of the mine development is for haul road dust suppression).

The various CGM water management system components and their linkages (via system transfers) are shown in schematic form in Figure 4.11.4.

The Site Water Management Plan (2013) was implemented for the CGM project with all water management ponds constructed on the CGM site and surface water drainage structures completed for the CGM development.

4.11.5 Water Storage on Site

[Development Consent 14/98 MOD 10 condition 4.1/4.2(v)]
[Development Consent 14/98 MOD 11 condition 4.4(ii)]

The ICDS comprises a series of six internal drainage catchments (each served by a contained water storage for runoff collection) and two water supply storages. With the exception of D5, the contained water storages are designed to collect runoff generated from their contributing catchment during a 1 in 100 year ARI rainfall event of 48 hours duration.

Contained water storage D5 and water supply storages D6 and D9 are designed to contain runoff and/or incident rainfall from a 1 in 1,000 year ARI rainfall event of 48 hours duration. With the exception of storages D1 and D4, all storages would ultimately spill to the open pit. Storages D1 and D4 are equipped with pumps to enable dewatering of these storages between rainfall events. Runoff from the outer batters of the perimeter waste rock emplacement, ponds against the temporary isolation bund, which has a capacity for at least a 1 in 100 year ARI rainfall event of 48 hours duration (approximately 900 Ml).. Water that ponds in this area would be pumped to D6 between rainfall events, as required.

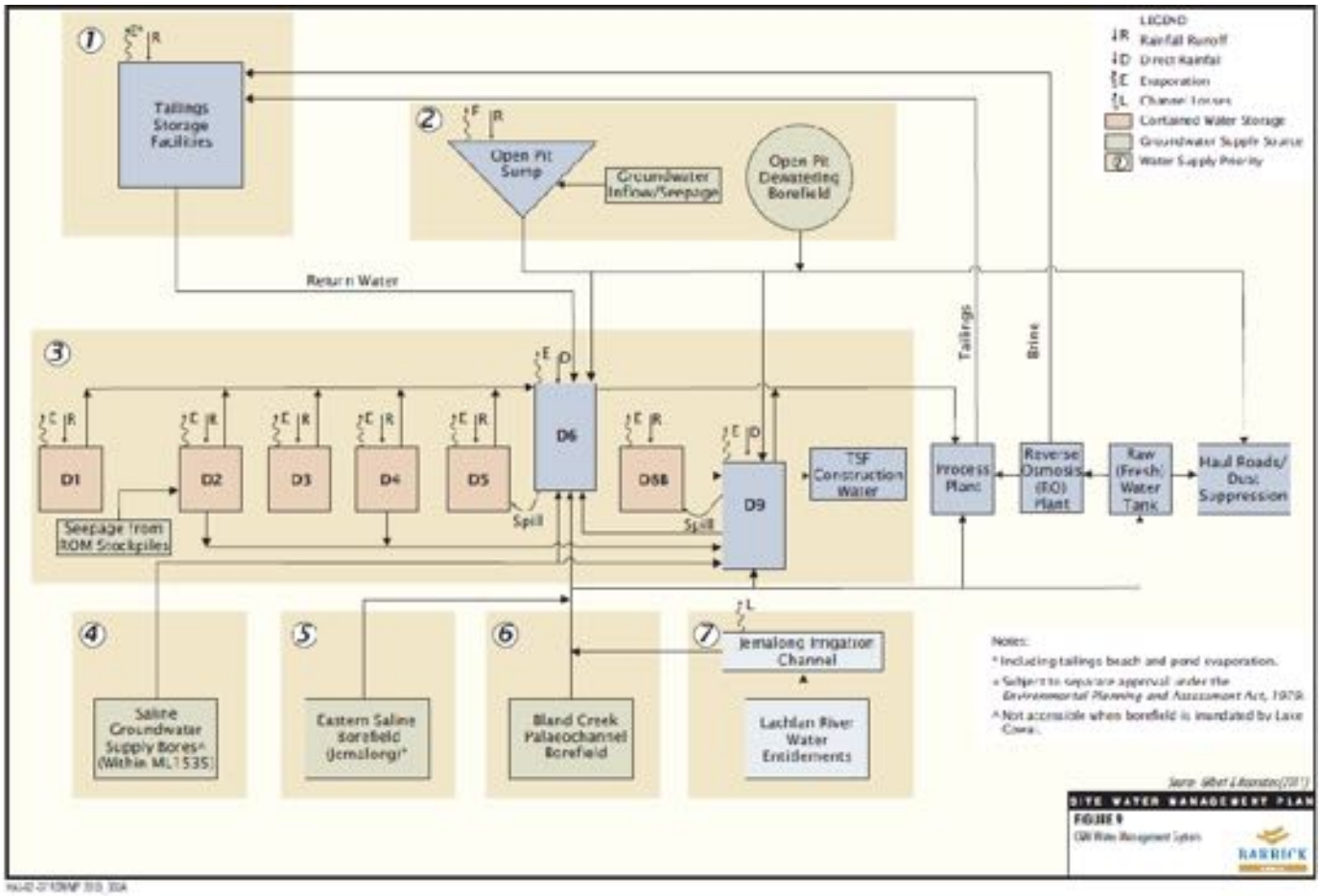

Figure 4.11.5: CGM water management system components and their linkages (via system transfers).

4.11.6 Water Monitoring Program

[Development Consent 14/98 MOD 11 condition 4.5(b)]

Water monitoring has been conducted in accordance with the Site Water Management Plan and Surface Water, Groundwater, Meteorological and Biological Monitoring Program.

The on-site surface water ponds within the closed catchment that physically separates any mine water from off-site waters in the upstream diversion drains and Lake Cowal, was engineered to contain all runoff from the mining lease with no discharge to the environment. The monitoring data collected from these on-site ponds has not been assessed against the Australian and New Zealand Environmental Conservation Council (ANZECC) and Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) (2000) guidelines as all water in the ponds is retained on-site within the closed catchment.

A general summary of the implementation and monitoring of the CGM site water management system and monitoring during 2014 and 2015 has indicated:

- The Operational Water Budget is subject to annual review and revision by process plant staff.
- A total of 1379 mega-litres (Ml) of water were extracted from the Bland Creek Paleochannel during January and December 2013 and 1317Ml between January and December 2014. Zero (0) ML was

extracted from the eastern saline bore-field during 2014. Jemalong Irrigation extraction under Water Access Licences was 1102.1 Ml in 2013, and 643.2 between January and May 2014.

- The open pit dewatering bore-field established external to the perimeter of the E42 Pit and water from the open pit de-watering sumps (including ponds D4, D3, D8A and heavy rainfall) is mainly used in the process plant ore treatment via Pond D6. Some water is also used for dust control on E42 Pit and TSF haul roads.

- EPL trigger rainfall monitoring events (i.e. >20mm/24hrs) for the surface water monitoring program occurred on the following dates between March 2014 and April 2015 and surface water monitoring was conducted in accordance with the Site Water Management Plan monitoring program:

1 March 2014	26.6mm
1 June 2014	44.8mm
5 January 2015	21.8mm

- Surface water sampling in Lake Cowal (i.e. points 14-18) and stormwater quality monitoring (points12-13) occurred following rainfall events during May 2014 to April 2015. Surface water and sediment monitoring of Lake Cowal was undertaken by David McMahon of McMahon Earth Science - D M McMahon Pty Ltd and reported in *"Surface Water and Sediment Sampling and Analysis Lake Cowal 2014"*.

- The results of the surface water monitoring reported for 2014 did not exhibit any trend that indicated a connection between the closed catchment of the CGM operations and Lake Cowal waters. The comparison of the 2013 - 2014 Lake Cowal surface water quality results against the baseline water quality results from 1991 – 1992 indicated that the 2013-2014 monitoring results are generally similar.

- A comparison of the 2013 Lake Cowal surface water quality results against the ANZECC and ARMCANZ (2000) default trigger values for surface water (lakes) indicated that the 2013 monitoring results (totals and dissolved) were below or marginally above the default trigger values. Nickel, Lead and Zinc levels all increased slightly from previous readings but this is a trend seen in both the lake and inflow results. Overall, the Turbidity and Suspended Solids are higher than previously recorded which is a trend seen across both the lake and inflow sites.

- A comparison of the 2013 Lake Cowal sediment results against the ANZECC and ARMCANZ (2000) recommended trigger values for sediment was undertaken. The monitoring results indicate that the 2014 extractable results were below the recommended trigger values and were similar to the 2010 2013 monitoring results. Overall Lead and Zinc levels have decreased slightly from data previously recorded in 2012-2013

Summary comments on specific water monitoring is presented below:

4.11.6.1 Surface Water

[Development Consent 14/98 MOD 11 condition 4.5 (a)(i) and (b)]

The Site Water Management Plan and Surface Water, Groundwater, Meteorological and Biological Monitoring Programme and Erosion and Sediment Control Management Plan have been reviewed and revised to address the Development Consent 14/98 MOD 11 conditions 4.5 (a)(i) and (b) and incorporate the new site water management infrastructure.

The surface water monitoring network has been updated for MOD 11 to include water quality monitoring on the soil stockpile area sediment basin in the north of ML 1535 for parameters including pH, EC, suspended solids, at a frequency consistent with sediment control structures.

Surface water monitoring was undertaken at monitoring sites along the six transects used during the baseline monitoring program (described in the SWGWBMP) for evaluation of water quality data against records of baseline monitoring undertaken prior to development of the CGM project. Lake Cowal surface water monitoring has been conducted at the monitoring locations when the water level in Lake Cowal was at or above 204.5 m AHD.

Monitoring is conducted at specific areas (including Internal Catchment Drainage Systems and contained water storages D1, D2, D3, D4, D5, D8A and D8B) within the CGM mining lease area.

Review of the surface water monitoring program (including a review of the frequency of monitoring and program parameters) is conducted annually. Monitoring data is entered on to the CGM monitoring database to enable trends to be identified and to validate the predicted performance of the site water management system.

4.11.6.2 Lake Cowal Water Quality

[Development Consent 14/98 MOD 11 condition 4.5(b)]

Baseline water quality reported in the *Environmental Impact Statement Cowal Gold Project 1998* was based on results of an intensive sampling program conducted between 1991 and 1995. The water monitoring program was supplemented by an additional monitoring campaign undertaken from November 2010 through to June 2013 when Lake Cowal was inundated and this included sampling of lake inflow from Sandy and Bland Creeks.

Results from this November 2010 to June 2013 monitoring program were compared with values obtained from sampling programs conducted in the baseline period prior to commencement of mining operations and to the ANZECC/ARMCANZ (2000a) guideline values.

Average pH measured at the lake transect sites during November 2010 to June 2013 was 8.0. The range of pH levels recorded at the lake transect sites (5.56 to 11.42) was greater than that recorded at the lake inflow sample locations (5.78 to 9.39,). The range measured at the lake transects during the baseline period was 7.72 to 9.8.

Average EC in the Lake Cowal water over the period of November 2010 to June 2013 was 303 µS/cm with a range of 2 to 4222 µS/cm. This average EC is lower than the average EC measured at the lake transect sites during the baseline period in 1991 to 1995 (881 µS/cm).

Average total nitrogen levels measured at the lake transect sites between November 2010 to June 2013 was 765 µg/L, and the average concentration in lake inflows from Bland Creek and Sandy Creek was (1,099 µg/L). These levels were higher than the maximum level recorded during the baseline period (257 µg/L). [The ANZECC/ARMCANZ (2000a) default trigger value for fresh water lakes (350 µg/L).

Average total phosphorous levels measured at the lake transect sites was 348 µg/L, and the average at the lake inflow sites in Bland Creek and Sandy Creek was 601µg/L The baseline data collected between 1991 and 1995 ranged from 970 to 2,640 µg/L.

Laboratory analysis of lake and inflow water quality samples also included metals analyses for nine metals (arsenic, cadmium, copper, iron, lead, manganese, mercury, nickel and zinc):

- Mercury and cadmium concentrations were at or below laboratory detection level at both lake transect and lake inflow sites during the November 2010 to June 2013 period.

- Average arsenic, manganese and nickel concentrations at the lake transect sites were below ANZECC /ARMCANZ (2000a) default trigger levels for protection of slightly modified aquatic ecosystems (95% protection level).

- Average lead, copper and zinc concentrations at the lake transect sites were lower than the respective average concentrations measured at the lake inflow sites. The average lake copper concentration (8.4 µg/L), lead (4.9 µg/L) and zinc (20.2 µg/L) were greater than the baseline values collected between 1991 and 1995.

As runoff and water within the CGM area is fully contained within the ICDS, there was no obvious causal link between the mining operations and the water quality in the Lake as groundwater, including any seepage from on-site storages, would flow toward the mine pit (Coffey Geotechnics, 2013).

4.11.6.3 Lake Protection Bund

[Development Consent 14/98 MOD 11 condition 4.5 (c)]

Water monitoring of sites P1, P2 and P3 close to the Lake Protection Bund exhibited elevated pH values in February 2011 compared to sites on the opposite side of Lake Cowal. Elevated pH levels were also recorded near the CGM in February 2012 although similar levels were also measured on the opposite side of the lake at that time (e.g elevated pH value recorded at site C1 (11.05) in February 2011) which suggests that pH has been elevated at sites near and distant from the CGM.

4.11.6.4 Other On-Site Water Quality Monitoring

Monitoring of pH, EC and TSS levels in the UCDS has occurred from 2007 to 2015 when water was present in the UDCS. Recorded pH ranged from 6.1 to 9.7, EC ranged from 61 to 2,220 µS/cm and TSS from 4 to 1,300 mg/L.

pH, EC and TSS were also monitored at on-site contained water storages and the open pit from 2007 to 2015. Ranges of pH were recorded from 4.4 to 10.1, EC between 112 and 142,700 µS/cm and TSS from 1 to 1,630 mg/L. High recorded EC values reflect, at least in part, to the use of water supplied from saline groundwater bores and saline groundwater inflow to the open pit. It should be noted that no discharge to the environment occurred from any of the contained water storages.

4.11.6.5 Groundwater

[Development Consent 14/98 MOD 11 condition 4.5 (a)(ii)]

In accordance with Development Consent 14/98 MOD 11 condition 4.5 (a)(ii, a groundwater monitoring program for the CGM has been developed. Groundwater monitoring is undertaken at monitoring sites used during the baseline monitoring program for the mine development area.
The groundwater monitoring program relates to aquifers beneath the ML area and regionally within the Bland Creek Palaeochannel aquifer.

Groundwater monitoring at and around the CGM Project area commenced as bore licences were obtained under the *Water Act, 1912* (NSW) Part 5.

Groundwater monitoring results are interpreted and reported annually to the NoW, OEH and DPI-Fisheries. Monitoring data is entered on to the CGM monitoring database to enable trends to be identified.

Groundwater monitoring result summary has demonstrated that:

- Electrical Conductivity (EC) and pH levels in groundwater within ML1535 have generally remained stable between 2004 and 2015. Monitored pH levels have been similar to baseline levels.

- Monitored pH levels near to the Tailings Storage Facilities generally ranged between 6.5 and 7, with the exception of MON01B (to the east of the northern TSF), that exhibited pH ranging between 4.5 and 6. (These results from MON01B may reflect a response to increased rainfall recharge during 2012). Groundwater results around the TSFNC have exhibited a pH of 6. While open pit dewatering is causing a localised reduction in groundwater levels, pH and EC appear to be unaffected by this drawdown.

- Monitoring of groundwater commenced for the tailings storage facilities prior to placement of any tailings. The dewatering piezometers installed around the mine pit area have been sampled in accordance with the EPL and results reported to the DECCW/OEH in the EPL Annual Return and in the AEMR. The monitoring of groundwater quality has continued in piezometers that have been retained on the mine lease area to provide background data, in addition to the EPL specified monitoring points.

- Monitoring results for cyanide in groundwater have been reviewed for September 2004 to December 2014. Within the available data, concentrations over this period have generally been less than the four (4) micrograms per litre (µg/L) Limit of Reporting (LoR) at all groundwater monitoring locations. Where monitoring has shown total cyanide to be present, its concentration at individual monitoring locations has not been consistent over time, and its observed presence has not always been supported by WAD analysis.

- The groundwater monitoring results indicate that there is no trend that cyanide has leached from the TSF into the surrounding groundwater.

- Dissolved arsenic concentrations have been generally less than the laboratory Limit of Reporting over the September 2004 to December 2014 period. Variations in metal concentrations were considered to reflect the natural heterogeneity in ground conditions, rather than direct impacts from mining, since the regional groundwater system is located in a naturally metalliferous geological terrain.

- Barrick contracted independent consultants Coffeys Geotechnics to review the collected groundwater monitoring data. The groundwater quality results and trends reported in the assessment illustrated that the full containment of mine site water and water management control measures, and control of runoff from the TSF and waste rock emplacements, have been successful. Coffey's report for 2012-2013 concluded:

  "• The zone of influence after nine years of mine dewatering is small (around 1 km in radius), indicating low lateral permeability;
  • There has been a localised increase in groundwater levels south of the southern TSF and groundwater chemistry has remained relatively stable at monitoring bores MON02A and MON02B. A separate

groundwater level investigation was conducted by Coffey to further assess the change in groundwater level in this area (Coffey, 2009b). It was concluded that increasing groundwater levels at bores MON02A and MON02B south of the southern TSF and northeast of the southern TSF at P412A-R are related to the movement of seepage from the TSF. The direction of seepage flow towards the open pit is consistent with the seepage flow direction predicted in the EIS and recent hydrogeological assessments (Coffey, 2011b and 2012); and

- *Water management control measures appear to have successfully prevented groundwater contamination. (Coffey, May 2014."*

and

"The monitoring data did not exhibit results that indicated a connection between the closed catchment of the CGM operations and the waters of Lake Cowal."

4.11.6.6 Bland Creek Palaeochannel

The Bland Creek Palaeochannel monitoring bores (BLPR1 to BLPR7) have been monitored for water quality since 2004. The data show an average salinity of around 2000 µS/cm, except for BLPR 3 (about 5,000 µS/cm). BLPR3 has a higher salinity because it is screened higher in the profile of the Lower Cowra Formation.

Based on the groundwater data, EC has remained relatively stable at all monitoring locations within the BCPB since the commencement of the CGM.

Development consent permits maximum daily water extraction from the Bland Creek Palaeochannel bores (PB1 to PB4) of up to 15 ML/day and maximum annual extraction of up to 3,650 ML/year. Extraction of water from the Bland Creek Paleochannel bore-field has not exceeded the allowable extraction rates or volumes during the operation of the mine and process plant during 2013 and April 2015.

4.11.7 Conclusion

The Site Water Management Plan prepared to satisfy Development Consent 14/98 conditions has provided an adequate program for the management of water and controlling the surface water quality from the disturbed areas of the CGM site. The water monitoring program has been conducted in accordance with the Surface Water, Groundwater, Meteorological and Biological Monitoring Programme and Erosion and Sediment Control Management Plan. The independent revision of surface water monitoring data (David McMahon of McMahon Earth Science - D M McMahon Pty Ltd) concluded that "*The results of the surface water monitoring reported for 2014 did not exhibit any trend that indicated a connection between the closed catchment of the CGM operations and Lake Cowal waters*" and the independent review of groundwater monitoring data *(*Coffey Geotechnics) concluded that *"The monitoring data did not exhibit results that indicated a connection between the closed catchment of the CGM operations and the waters of Lake Cowal."*

4.12 Hazardous Materials and Tailings Management

[Development Consent 14/98 MOD 11 condition 5.1 to 5.7]

4.12.1 Hazardous Waste and Chemical Management Plan

[Development Consent 14/98 MOD 10 condition 5.7]
[Development Consent 14/98 MOD 11 condition 5.7]

A Hazardous Waste and Chemical Management Plan was prepared to satisfy Development Consent 14/98 condition 5.7 and approved by the Director-General in 2003. The Hazardous Waste and Chemical Management Plan was revised in March 2006 and regularly updated with addenda between 2006 and 2013:

- waste classification, treatment and/or disposal at CGM for hydrocarbon contaminated soil occurs at the Bioremediation Facility constructed and approved on the Project site in January 2008;
- waste tracking requirements have been revised in accordance with the *Protection of the Environment Operations (Waste) Regulation,* 2005;
- revision of waste classifications and proposed management measures for the area of historic contamination was approved in May 2009; and
- allowing the addition of a cyanide destruction method (i.e. the INCO process) as an alternative to Caro's Acid, and the associated introduction of sulphur dioxide (SO_2) as sodium metabisulphite (SMBS) to reflect the approved modification to the Development Consent MOD 8 that was prepared and submitted to the DoP in December 2009 and approved in March 2010; and
- an updated and revised Consolidated Hazardous Waste and Chemical Management Plan was prepared and submitted to DoP on 27 April 2011.

The Hazardous Waste and Chemical Management Plan was reviewed following granting of Development Consent 14/98 MOD 11 and it was considered that the current document met the requirements of the MOD 11 approval, and no revision was proposed.

4.12.2 Hazardous Waste and Chemical Management Performance

The requirements of the Hazardous Waste and Chemical Management Plan were implemented (e.g. bunded fuel and lubricant storage, bunded chemical storage facilities) as the CGM has developed.

The approved Operations Emergency Response Plan (OERP) now forms part of the hazardous waste and chemical management procedures. The OERP was revised and submitted to DoP on 19 November 2010.
Two emergency response trailers are available on site and are operational.

The Emergency Response Team (ERT) and other members of the Barrick workforce receive training in emergency response procedures. Numerous training exercises have been carried out by ERT, including some with external emergency services personnel.

The Chem Alert III system is used for all existing chemicals on site and approval via the system applies to the acquisition of any new chemicals brought onto the CGM site (by Barick or its contractors).

The management and recycling / disposal of all chemical and hazardous wastes are managed under contract by J R Richards and Sons through the CGM waste storage and disposal area adjacent to the CGM maintenance workshop area.

4.12.3 Waste Rock Emplacement

[Development Consent 14/98 MOD 10 condition 5.1]
[Development Consent 14/98 MOD 11 condition 5.1 0]

Waste rock from the open cut mining operations is placed on three waste rock emplacement areas:

- The northern waste rock emplacement is the largest of the emplacement areas. Runoff from the external face of the northern waste rock emplacement reports to the external contained water storage D1 which has been constructed below the external (north-eastern) toe of the northern waste rock emplacement area and is dewatered by pumping to storage D6.

- The southern waste rock emplacement. Runoff from the external face of the southern waste rock emplacement reports to the external contained water storage D4 which has been constructed below the external (south-eastern) toe of the southern waste rock emplacement area and is dewatered by pumping to storage D6 or D9.

- The northern and southern waste rock emplacements are integral with the perimeter waste rock emplacement which is a component of the permanent lake isolation system. The outside faces of the northern and southern waste rock emplacements form part of the perimeter catchment limits of the approved CGM.

- The perimeter waste rock emplacement area forms part of the permanent lake isolation system. It provides a continuous elevated landform linking the northern and southern waste rock emplacement areas. Runoff from The perimeter waste rock emplacement reports to the storage that forms between the toe of the perimeter waste rock emplacement and the Temporary Isolation Bund. Water that accumulates in this storage is returned to D6 for reuse on site.

4.12.4 Tailings Emplacement

[Development Consent 14/98 MOD 10 condition 5.2]
[Development Consent 14/98 MOD 11 condition 5.2]

The Northern Tailings Storage Facility (NTSF) and Southern Tailings Storage Facility (STSF) have been constructed in accordance with the requirements of the DECC (EPA) /DSC and DPI (Minerals). The STSF and NTSF initially received tailings between March 2006 and May 2007 respectively. The Dam Safety Committee (DSC) provided a response to the Construction Report for the Tailings Storage Facilities in January 2009 advising that the review satisfies the Committee's requirements.

Tailings material is deposited into the Tailings Storage Facilities as a slurry. The Tailings Storage Facilities are raised above the surrounding natural surface and, as such, their catchment area comprises only the area inside the confining embankments. Tailings are discharged to only one TSF at any one time. Once the tailings level has risen to its design level, discharge is switched to the other TSF while the embankment of the first TSF is raised.

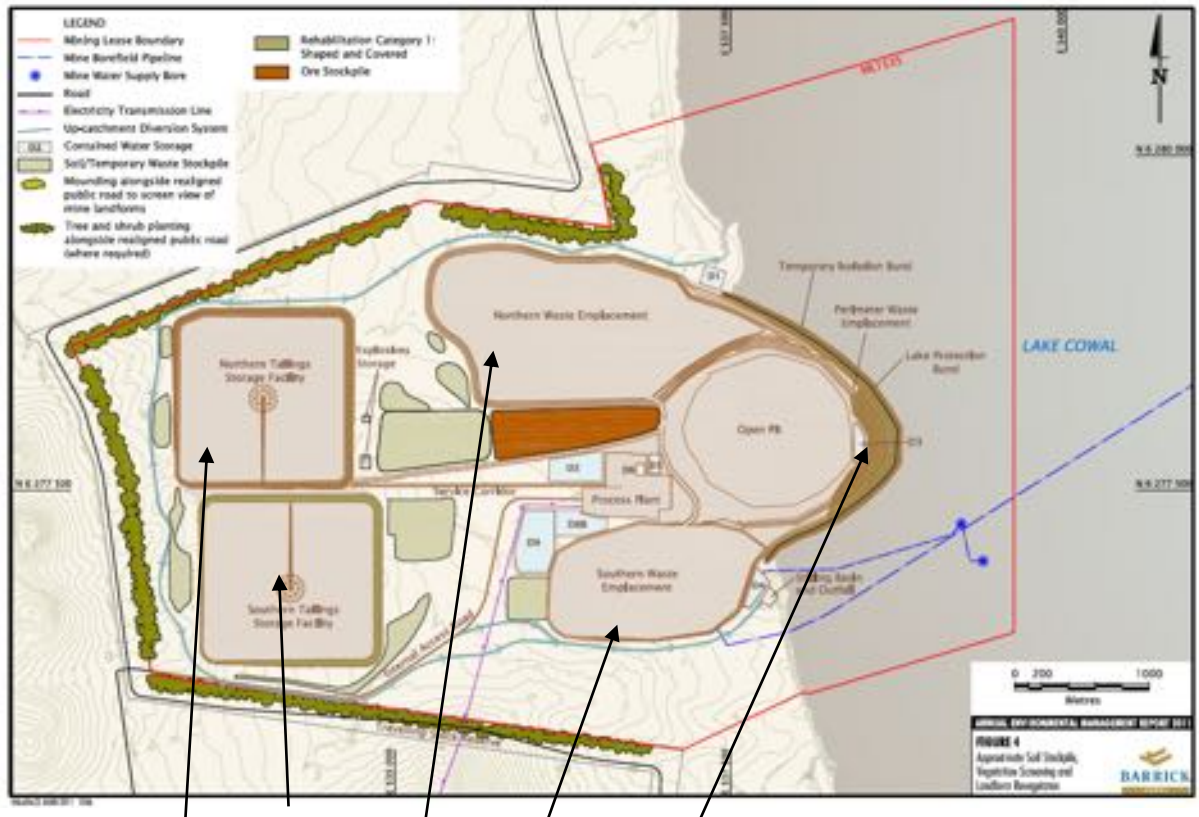

Figure 4.11.4: NTSF and STSF, and Northern, Southern and Perimeter Waste Rock Emplacements

Rainfall runoff and free water liberated during settling and consolidation of the tailings accumulate in an internal (central) decant pond. Water from the decant pond of the active TSF is pumped to storage dam D6 for re-use in the processing plant. The TSFs have been designed to maintain a minimum freeboard sufficient to store at least the contingency 1 in 1,000 year ARI rainfall event at all times.

4.12.5 Conclusion

The Hazardous Waste and Chemical Management Plan provides the processes and procedures on site for the management of all hazardous chemicals transported to, stored on, used in the process plant, and hazardous wastes generated on site. The handling of fuels, oils, and chemicals on site is managed in accordance with the plans, audits and reporting required under Development Consent 14/98 condition 5.4, the CGM Emergency Response Management Plan and CGM Safety Management System. All mine wastes (i.e. waste rock, tailings, contaminated material) generated on site are managed under a waste management plan. Recyclable wastes and administrative/putrescible waste is managed under contract with JR Richards and Sons.

The Hazardous Waste and Chemical Management Plan has been revised regularly to address the changes in CGM operations under the various Modifications to the Development Approval 14/98. The management procedures and protocols have resulted in best practice for any mine waste materials, chemicals transported to, stored and/or used on the CGM site.

4.13 Cyanide Management

[Development Consent 14/98 MOD 11 condition 5.3]

4.13.1 Cyanide Management Plan

[Development Consent 14/98 MOD 10 condition 5.3(b)]
[Development Consent 14/98 MOD 11 condition 5.3(b)]

The Cyanide Management Plan prepared to satisfy Development Consent 14/98 condition 5.3(b) was approved by DoP on 9 January 2006. Addenda to the Cyanide Management Plan subsequently prepared and submitted to the DoP related to:

- Cyanide monitoring and regular water quality sampling for CN_{WAD} levels prepared in August 2007 and approved by DoP;
- Fauna death reporting requirements were revised in June 2008 and approved in October 2008 for changes approved in Modification to the Development Consent granted on 13 March 2008 under Section 96(1A) of the *Environmental Planning and Assessment Act, 1979*;
- Cyanide analysis method and on-line monitoring of CN_{FREE} submitted to DoP and DECCW in October 2009;
- Location of tailings slurry stream CN_{WAD} monitoring within the process plant, submitted in July 2010 and approved by DoP in December 2010.
- The management of cyanide transport, storage and use in the process plant has been implemented in accordance with the Cyanide Management Plan. A variation to the transportation route from the Queensland border to Dubbo was approved by the DoP Hazards Unit (dated 1 December 2010) and an emergency exemption was granted to allow use of the Cowra-Temora road whilst the Newell Highway was flooded in March 2012.

The Cyanide Management Plan was reviewed in 2015 in relation to the requirements of Development Consent 14/98 MOD 11 condition 5.3(b), and it was considered that not revision was required.

Commitments in the Cyanide Management Plan are listed in Table 15.

Table 15: Cyanide Management Plan Commitments

Section / Page No.	Cyanide Management Plan Commitments	Comments
s.4.1/p.12	Delivery and storage of cyanide on site will take place in a controlled area. Cyanide delivery and storage will be within a concrete-bunded area located away from general work areas and incompatible reagents.	Delivery of cyanide on site takes place in a controlled area within a concrete-bunded area.  **Cyanide delivery on bunded concrete area with high visibility signage.**
s.4.1/p.13	Storage areas, tanks, pipelines, pumps and valves will have high visibility labelling and will be inspected regularly for signs of leakage,presence of solution outside of the tanks in the bunded areas and integrity of the containment. Any aspects requiring maintenance or repair will be noted and records documenting the inspection and corrective measures will be kept.	Storage areas, tanks, pipelines, pumps and valves have high visibility labelling and are inspected regularly for any sign of leakage, presence of solution outside the tanks in the bunded areas and integrity of containment. Inspection of storage areas and bunding occurs daily by Barrick staff. Audits of the bunding are also conducted annually by an external consultant.
s.4.2.2/p.13	In accordance with MCoA 5.3(b)(ii), CN_{WAD} levels of the aqueous component of the tailings slurry stream will be maintained so that they do not exceed 20 mg/L CN_{WAD} (90 percentile over six months) and 30 mg/L CN_{WAD} (maximum permissible limit at any time) at the discharge point to the tailings storages. Cyanide destruction has been incorporated into the process to ensure CN_{WAD} levels at the discharge point to the tailings storages will be maintained to the levels stated above. Caro's Acid will be used to destroy cyanide.	Monitoring of the decant water quality and tailing discharge occurs twice daily with the samples analysed at the on-site laboratory. Check analyses are conducted by an external NATA registered laboratory. All results have been compliant with the condition criteria and did not exceed 20 mg/L CN_{WAD} (90 percentile over six months) or 30 mg/L CN_{WAD} (maximum permissible limit at any time) at the discharge point to the tailings storages.
s.4.2.3.1p.14	Tanks holding process solutions (e.g. leach tanks) will be located on bunded concrete containments. The processing plant has been designed such that process water containing cyanide is recycled and therefore kept within the area encompassed by the processing plant run-off collection drain and storage. In the event of spillages, all solutions will be contained within the process plant bunding	All tanks holding process solutions (e.g. leach tanks) are located within bunded concrete containments. Any leakage or spillage from the tanks or their fittings is contained within the plant bunds.

Section / Page No.	Cyanide Management Plan Commitments	Comments
s.4.2.3.2/p.14	The tailings delivery and return water lines will be contained within a bunded pipeline corridor that will run parallel to the service corridor between the processing plant and tailings storage facilities. The tailings slurry will be pumped to the tailings storages at ground level. The bunded corridor will drain back to the processing plant and will contain any spills in the event of pipeline rupture/failure.	 **Tailings delivery/return water lines in a bunded pipeline corridor between the process plant and tailings storage facilities**.
s.4.2.3.3/p.15	As required by MCoA 4.1/4.2(c)(i) and 5.2(a) the tailings storages will be constructed to the requirements of DLWC, EPA, DMR and the NSW Dams Safety Committee (DSC). Further, the floor of the tailings storages will be constructed and compacted to a permeability acceptable to the DMR and EPA in consultation with DLWC, in accordance with MCoA 5.2(b).	The northern and southern tailings storage facilities were constructed in accordance with the requirements of DLWC, EPA, DMR and the NSW Dams Safety Committee. The floor of the tailings storages was constructed and compacted to approved permeability criteria acceptable to the DMR and EPA in consultation with DLWC.
s.4.2.3.3/p.15	Following tailings deposition, supernatant water will drain to the central pond and decant towers. The decant tower will be accessible via a causeway. An underdrainage pipe network will be installed to facilitate drainage of the tailings mass. The bulk of the water in each tailings storage will drain from the surface of the tailings and collect in the centre of each storage. This water as well as underdrainage water will be reclaimed and used within the processing plant. The decant system (including access causeway) will be progressively raised during the development of the tailings.	Following tailings deposition, supernatant water collects in a central pond with decant towers, accessible via a constructed causeway into the TSF. The supernatant water is reclaimed for reuse within the processing plant  **Causeway to the decant tower on Southern Tailings Storage Facility.**
s.4.2.3.4/p.15	Monitoring will be conducted for any movement of the tailings storages as described in the Monitoring Program for Detection of any Movement of Lake Protection Bund, Water Storage and Tailings Structures and Pit/Void Walls, as follows: • Visual assessments of the tailings structures will be undertaken routinely (i.e. weekly), following review of surface and groundwater monitoring data and following seismic events to identify the initial signs of movement.	Quarterly Movement Monitoring reports have been prepared for the CGM Southern and Northern Tailings Storage Facilities infrastructure. The Tailings Storage Facilities had no significant visual erosion or subsidence issues from regular survey information. Minor remediation of cracks and small sinkholes has occurred as required. Substantial revegetation cover on all batters and augmentation lifts of the two tailings storage facilities has occurred. Rehabilitation of the outer batters of the tailings storage facilities has included native grass species trials (as requested by the Independent Monitoring Panel and review input

Section / Page No.	Cyanide Management Plan Commitments	Comments
	• Survey assessment of the tailings structures will be routinely undertaken at six monthly intervals or following visual assessments that indicate movement of a structure and/or following seismic events to determine and quantify any movement of these structures.	by DII-MR and DII-Agriculture during the AEMR / MOP review process). Survey pillars were installed on the third and fourth augmentation crest of the STSF. Dr Neil Mattes of URS has provided independent oversight for the Cowal Gold Project Movement Monitoring Program of the Lake Protection Bund, Water Storage and Tailings Structures and Pit Void Walls.
s.5/p.16	The Flora and Fauna Management Plan and Implementation Plan to Protect Fauna from Interactions with the Tailings Storage Facilities will outline measures relevant to cyanide and wildlife management.	The Flora and Fauna Management Plan section 8 outlined contingency measures relevant to cyanide and wildlife management.
s.6.1/p.17	In accordance with Consent Condition 8.2(b) a summary of the cyanide monitoring results will be provided to EPA, DMR and the Director General for Planning, on a three monthly basis, unless otherwise agreed by the Director-General. All monitoring results will be included in the AEMR.	A summary of the cyanide monitoring results is provided to OEH (EPA), DT&I-DRE and DP&I, on a monthly basis. A summary of all monitoring results are also included in the AEMR section 3.5.3.
s.6.2.1/p.17	CN_{WAD} levels of the aqueous component of the tailings slurry stream will be monitored at the discharge point to the tailings storages twice daily (or as otherwise directed by the Director-General for Planning), in accordance with MCoA 8.2(b)(i). In accordance with MCoA 8.2(b)(ii), CN_{WAD} levels in the decant water of the tailings storages will be monitored twice daily (or as otherwise directed by the Director-General for Planning).	CN_{WAD} levels of the aqueous component of the tailings slurry stream are monitored in accordance with MCoA 8.2(b)(i) and MCoA 8.2(b)(ii). The relocation of the automated sampler from the discharge point at the tailings storage facilities, to the process plant occurred in July 2010 to improve accessibility to the sampler for maintenance and sample collection.
s.6.2.3.1/p.18	In accordance with MCoA 8.2(b)(iii) which requires provision of an on-site laboratory for quickly establishing CNWAD levels in the liquid at the discharge point to the tailings dams and in the decant ponds for monitoring purposes, CNWAD samples collected twice daily in accordance with the USEPA (1999) Method OIA-1677 at the discharge point to the tailings storages and in the decant water of the tailings storages will be analysed at the on-site laboratory. The samples will be analysed for CNWAD in the on-site laboratory using an Orion Instruments Analytical CN Solution TM FS 3100 analyser (or other instrumentation considered appropriate in consultation with DMR, EPA and the Director-General for Planning). The Orion FS 3100 analyser complies with US EPA (1999) Method OIA-	Free cyanide monitoring within the process plant area is conducted as part of the daily workplace monitoring program (refer to Cyanide Management Plan section 6.3). VELP distillation method using the Orion FS 3100 analyser for analysis of CNWAD, plus a picric acid method of analysis for analysis of cyanide at the on-site laboratory (was approved by the relevant agencies in 2007). The Cyanide Management Plan was amended in August 2007 to reflect the approval of the use of the picric acid method. CN results are verified by an off-site NATA registered laboratory in West Wyalong. Results are available to CGM within 24hours.

Section / Page No.	Cyanide Management Plan Commitments	Comments
	1677 requirements. The results of the Orion Instruments Analytical CN Solution TM FS 3100 analyser will be verified by the off-site laboratory analysis.	
s.6.2.3.2/p.18	CN_{WAD} samples collected twice daily at the discharge point to the tailings storages and in the decant water of the tailings storages in accordance with AS/NZS 5667:1:1998 Water Quality – Sampling and APHA (1998 or subsequent version) Standard Methods for the Examination of Water and Wastewater will be analysed at an off-site NATA registered laboratory located in West Wyalong.	The samples of discharge from the process plant to the tailings storage facilities are collected in accordance with standard methods for cyanide analysis and transported on the same day to the NATA registered laboratory in West Wyalong for confirmatory analysis.
s.6.2.3.2/p.19	For samples sent to laboratories, a sample chain-of-custody (CoC) form will be completed for each sample collected. A copy of the CoC will be provided to the laboratory with the samples. A copy of the CoC will be held on site.	Samples collected for cyanide analysis are forwarded to the NATA registered laboratory in West Wyalong with Chain-of-Custody forms. The results for analysis of cyanide at the external NATA registered laboratory provide confirmation of on-site laboratory testing with results available within 24 hours.
s.6.2.4/p.19	Data obtained by the monitoring of CN_{WAD} levels at the discharge point to the tailings storages and in the decant water of the tailings storages will be maintained on site by the Environmental Manager.	Monitoring data for CN_{WAD} and CN_{FREE} is retained on site in the Barrick monitoring database.
s.6.3/p.19	MCoA 8.2(b)(iv) requires the on-line monitoring of CN_{FREE} levels at locations where employees are operating. The on-line (i.e. ambient) monitoring of HCN gas will be undertaken for employee safety.	The ambient monitoring of CN_{FREE} levels provides continuous readings and displays the results in the process plant control centre. In addition to the ambient monitors, employees may carry personal monitoring units in designated areas.
s.6.4/p.20	MCoA 8.2(b)(v) requires a monitoring program to be established for the detection of cyanide movement beneath and adjacent to the tailings storages…… Monitoring of CN_{WAD} levels will be undertaken at a network of groundwater monitoring bores to monitor cyanide movement beneath and adjacent to the tailings storages, namely: • down-gradient bores P412 A & B, P414 A & B, P418 A & B; • up-gradient bores P555 A & B, P558; • tailings storage monitoring bores MON-01 and MON-02.	A monitoring program for the detection of cyanide movement beneath and adjacent to the tailings storages has been implemented with a network of groundwater monitoring bores. Additional groundwater quality bores P415A, P415B, P416A, P416B, P417A and P417B are also monitored for CNWAD in accordance with EPL 11912.
s.6.4/p.20	In addition to the abovementioned bores, groundwater quality monitoring of bores P415A, P415B, P416A, P416B, P417A and P417B (Figure 3) will also be monitored for CN_{WAD} in accordance with EPL 11912. The CN_{WAD} results that are obtained for the	 **Groundwater bores for monitoring Cyanide (CN_{WAD}).**

Section / Page No.	Cyanide Management Plan Commitments	Comments
	groundwater bores will be recorded and retained as required by EPL 11912.	
s.7/p.22	Consent Condition 5.3(b) requires the CMP to provide contingency measures for reducing cyanide levels.	The Cyanide Management Plan section 7.1 provides contingency measures for: • reduction of HCN levels in areas where employees are operating; • section 7.2 provides contingency measures for reducing CN_{WAD} levels in the event CN_{WAD} levels exceed 20 mg/L (90 percentile over six months) or 30 mg/L (at any time) at the discharge point to the tailings storages, • section 7.3 outlines contingency measures for reducing cyanide levels in the tailings dams in the event it is established that fauna deaths are occurring from cyanide in tailings dam water, and • section 7.4 describes the process for EPA review of cyanide levels in the event of wildlife deaths occurring due to cyanide.
s.8.2.2/p.28	EPL 11912 Condition M4 requires Barrick to maintain a record of all complaints made in relation to pollution arising from any activity to which EPL 11912 applies.	CGM retain records of all complaints received on their community complaints line.
s.9.1/p.28	An AEMR will be prepared in accordance with the requirements of Condition of Authority 26 and MCoA 9.2 and submitted to the Director-General for Mineral Resources and the Director-General for Planning, respectively. The AEMR will report on cyanide management and use and the cyanide monitoring program. In accordance with MCoA 8.2(b).	Annual Environmental Management Reports (AEMR) have been prepared by CGM in accordance with Development Consent 14/98 MODA 11 condition 9.1(b). The cyanide management and monitoring program results are reported in the AEMR section 3.5.
s.9.3/p.29	In accordance with Consent Condition 8.2(b)(i), any CN_{WAD} measurements of the aqueous component of the tailings slurry stream at the discharge point to the tailings storages verified by the off-site laboratory in West Wyalong as exceeding 20 mg/L CN_{WAD} will be assessed daily (to ensure that CN_{WAD} levels do not exceed 20 mg/L [90 percentile over six months]) and reported monthly to the DMR and EPA, unless otherwise agreed by the Director-General.	The cyanide levels in the slurry stream did not exceeded <20mg CN_{WAD}/L (90%ile) between May 2013 and April 2015. Cyanide monitoring results were forwarded to the DP&I, DRE and OEH monthly, and to the CEMCC quarterly between May 2014 and April 2015.

Section / Page No.	Cyanide Management Plan Commitments	Comments
s.10.1/p.30	In accordance with MCoA 5.4(e), 12 months after the commencement of operations Barrick will carry out a comprehensive hazard audit of the proposed development and submit a report of the audit to the Director-General. The audit will be carried out at by a duly qualified independent person or team approved by the Director-General prior to commencement of the audit. Further audits must be carried out every three years and a report of each audit will be submitted to the Director-General within a month of the audit. Hazard audits will be carried out in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 5, "*Hazard Audit Guidelines*".	A Hazard Audit was conducted by Dean Shewring of Pinnacle Risk Management Pty Ltd, 12 months after commencement of operation of process plant (i.e. April 2007). The Hazard Audit was accepted by DoP on 6 August 2007. The second Hazard Audit of the CGM operations was conducted on 19-22 April 2010. DoP received the Hazard Audit Report 2010 on 24 December 2010 and approved the report on 15 February 2011. A Third Hazard Audit of the CGM operations was conducted between 8 and12 April 2013 and submitted to the DP&I.

4.13.2 Cyanide Criteria

[Development Consent 14/98 MOD 11 condition 5.3(a)

The Applicant shall ensure that cyanide levels of the aqueous component of the tailings slurry stream do not exceed: 20mg CN_{WAD}/L (90 percentile over six months), and 30mg CN_{WAD} /L (maximum permissible limit at any time), at the discharge point to the tailings storages

4.13.3 Cyanide Monitoring

[Development Consent 14/98 MOD 11 condition 5.3(a)

Monitoring of cyanide in the discharges to the tailings storage facilities is conducted twice daily.

During the May 2014 to April 2015 operational period no results exceeded the 20mg CN_{WAD}/L level or exceeded the maximum 30mg CN_{WAD}/L level.

Donato Environmental Services prepare a six monthly report on wildlife visitation to the tailings storage facilities and no cyanide related wildlife deaths occurred on or near the tailings storage facilities during the May 2014 to April 2015 period. Recorded cyanide concentrations in the tailings facilities were below the level that would be expected to cause mortality throughout the reporting period.

Although not associated with cyanide in the tailings storage facilities, it was reported that five (5) Welcome Swallows died in process plant leach tails thickener tanks between November and December 2014. Netting was erected over the tanks to prevent reoccurrence of incident.

No other wildlife deaths attributable to cyanide were recorded between May 2014 and April 2015.

4.13.4 Conclusion

The Cyanide Management Plan prepared to satisfy Development Consent 14/98 condition 5.3(b), and subsequent addenda prepared for the Plan were approved by DP&I. The management of cyanide at the CGM

site and process plant is representative of best practice. CGM is a signatory to the *"International Cyanide Management Code for the Manufacture, Transport, and Use of Cyanide in the Production of Gold"* and regular third party audits of the site practices and record keeping have confirmed compliance with the requirements of the International Cyanide Management Code.

Between May 2014 and April 2015 no cyanide results exceeded the 20mg CN_{WAD}/L or the maximum 30mg CN_{WAD}/L level. Donato Environmental Services reported on wildlife visitation to the tailings storage facilities and noted that no deaths attributable to cyanide in the TSF had occurred between May 2014 and April 2015,and that the monitored cyanide concentrations were all below the level that would be expected to cause mortality.

4.14 Air Management

[Development Consent 14/98 MOD 11 condition 6.1]

4.14.1 Air Quality Management Plan

[Development Consent 14/98 MOD 11 condition 6.1(c)]

A Dust Management Plan prepared to satisfy Development Consent 14/98 condition 6.1(a) was approved by DIPNR in 2003. The dust deposition monitoring sites were amended in August 2007 and an addendum to the Dust Management Plan, related to the location of monitoring site DG2, was submitted to DoP in December 2008 and approved in February 2009.

The Dust Management Plan was implemented to suppress dust from the mining operations and includes the use of water trucks for disturbed surface areas and internal haulage roads, speed restriction of vehicles on unsealed surfaces (to 20kph), and limiting soil stripping to areas to those required immediately for the development of the mine activities.

An Air Quality Management Plan prepared to satisfy the requirement of Development Consent 14/98 MOD 11 condition 6.1(c) was submitted to DP&E on 20 April 2015 and Barrick was awaiting approval from DP&E at the date of this audit (23 April 2015).

The commitments in the Dust Management Plan are summarised in Table 16.

Table 16: Dust Management Plan Commitments

Section/ Page No.	**Dust Management Plan** Commitments	Comment
s.5.2/p12	Maintain and use equipment to apply water to unsealed and trafficked areas at a rate which minimises dust emissions (MCoA 6.2(i)).	Two (2) 80t water tankers are used in the pit and surrounds for dust suppression and other areas where mining activities occur (e.g. tailings emplacement walls, southern waste emplacement area etc). There are also two additional 20t water tanker units in the Tailings Storage Facility Depot area. Application of water emulsified bitumen (PetroTac) has also occurred during 2013 and 2014 to reduce dust generation from light vehicle traffic on access roads around the administration area, process plant and maintenance areas.

Section/ Page No.	**Dust Management Plan** Commitments	Comment
s.5.4/p14	Where practicable, seed disturbed areas and stabilise with groundcover immediately following construction ((MCoA 6.2 (ii)).	The disturbed areas completed on the batters of the waste emplacement areas have been subjected to trials to determine groundcover rehabilitation requirements.
s.7/p19	Dust monitoring will include sites outside of the Project MLA area to assist in management of dust generated from mine operations.	Dust deposition gauges DG1 to DG10, DG15, and McLintock Shed are located outside the project MLA.
s.7.1/p19	Data from the on-site meteorological station will be used to predict dust impacts on nearby residences and bird breeding areas (MCoA 8.1).	The on-site meteorological station located near the southern ML 1535 boundary provides meteorological data and measures real-time wind speed and direction, temperature (2m and 10 m), barometric pressure, humidity, solar radiation and rainfall (MCoA 8.1). The data is available to CGM personnel on the CGM computer network.
s.7.2/p20	Continue dust deposition monitoring for life of the mine.	Dust monitoring sites established for the EIS baseline program have continued and the dust deposition monitoring program was agreed in consultation with the EPA and NWPS.
s.7.2/p22	Dust deposition samples are analysed monthly for ash content, combustible matter and insoluble solids.	Dust samples collected monthly in the dust deposition gauges are analysed for ash content, combustible matter and insoluble solids.
s.7.2.1/p22	Analyse composite dust samples for select metals at six monthly intervals for comparison to average crustal abundance levels.	An independent consultant from the University of Sydney (Dr Stephen Cattle) reviews dust monitoring data for the CGM. Following the review of dust monitoring data during 2011-2012 by Dr Cattle, ICP-MS methodology was adopted for the analysis of dust samples to get lower detection limits. The change in methodology was notified to DECCW/OEH on 27 April 2012.
s.7.2.3/p23	Assess Lake Cowal surface water quality results in conjunction with dust deposition data to provide assessment of possible impacts of dust on any surface waters (MCoA 8.3(b).	Monthly Lake Cowal water quality results are assessed with the dust deposition data by Dr Stephen Cattle, University of Sydney.
s.7.2.3/p24	Surface water monitoring data to be reported in the AEMR / Annual Review. Results to be reviewed and, if necessary, parameters and procedures revised annually as part of the AEMR process.	Lake Cowal surface water monitoring occurs monthly (when lake water is present), and the results are reported in the AEMR and EPA Annual Review.
s.7.3/p24	Monitoring TSP by high volume sampler in accordance with procedures established with the EPA namely Approved Methods for Sampling and Analysis of Air Pollutants in NSW will continue to be monitored for the life of the mine.	TSP is monitored using a high volume air sampler located at the Coniston Homestead, in accordance with the EPA guideline *"Approved Methods for the Sampling and Analysis of Air Pollutants in NSW"*.
s.7.4/p25	Results of the meteorological, TSP and dust deposition monitoring to be maintained in	All dust deposition, TSP and meteorological monitoring data is retained in the Barrick

Section/ Page No.	**Dust Management Plan** Commitments	Comment
	database. Results will be analysed and reviewed for comparison with respect to monitoring program.	RIMS database and review of the data occurs for reporting in the AEMR.
s.10/p30	An Annual Environmental Management Report (AEMR) for submission to the Director-General and made available to the nominated authorities, and any other interested stakeholders on request (MCoA 9.2)	Annual Environmental Management Reports (AEMR) prepared by CGM in accordance with MCoA 9.2 included the results for dust management in AEMR section 3.10.

4.14.2 Air Quality Criteria

[Development Consent 14/98 MOD 11 condition 6.1(a)]

Criteria for particulate matter emissions generated by the CGM are specified in Development Consent 14/98 MOD 11 condition 6.1(a). The criteria are the maximum levels allowed to reach any residence on privately-owned land.

Long term impact assessment criteria for particulate matter

Pollutant	Averaging Period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m^3
Particulate matter <10µm (PM_{10})	Annual	30 µg/m^3

Short term impact assessment criterion for particulate matter

Pollutant	24 hour	Criterion
Particulate matter <10µm (PM_{10})	24 hour	50 µg/m^3

Long term impact assessment criteria for deposited dust

Pollutant	Averaging Period	Max increase in deposited dust level	Max total deposited dust level
Deposited dust	Annual	2g/m^2/mth	4g/m^2/mth

4.14.3 Meteorological Monitoring

[Development Consent 14/98 MOD 10 condition 8.1]
[Development Consent 14/98 MOD 11 condition 6.2]
[Environment Protection Licence condition P1.4 and M4]

The automated meteorological station is located near the exploration office on the southern boundary of ML1535 and records rainfall, wind speed, wind direction and temperature in accordance with requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline. The meteorological station is equipped to provide 15 minute continuous data to the CGM site for the parameters in EPL condition M4. Data is downloaded and reported monthly to CGM by Sentinel and calibration of the meteorological station equipment occurs quarterly by Sentinel Pty Ltd.

Parameter	Units of Measure	Continuous Averaging Period	Sampling Method
Rainfall	mm	24hr	AM-4
Temperature @ 2m	oC	15min	

Parameter	Units of Measure	Continuous Averaging Period	Sampling Method
Temperature @ 10m	oC		
Wind speed @ 10m	m/s		AM-2 & AM-4
Wind direction @ 10m	o		AM-2 & AM-4
Sigma theta @ 10m	o		AM-2 & AM-4
Solar radiation	W/m^2		AM-4
Siting Requirements			AM-1 &AM-4
Measurement Requirements			AM-2 & AM-4

4.14.4 Dust Monitoring Program

Dust monitoring is carried out in accordance with the Dust Management Plan with eighteen (18) depositional (static or gravimetric) monitoring sites within and surrounding the CGM. Fourteen (14) of the dust deposition gauges are located at residential locations and bird breeding sites, and four (4) gauges are located within the CGM Mining Lease Area (MLA).

The high-volume air sampler (HV1) at 'Coniston' Homestead to the north of the CGM monitors Total Suspended Particulate (TSP).

Table 18: Dust monitoring sites outside the CGM Mine Lease Area

Dust Gauge	Site Location Rationale
DG 1	Coniston residence
DG 2	Bird breeding area
DG 3	General Monitoring Site (proximal to bird breeding area)
DG 4	Native flora area and Bird Breeding Area (Lake Cowal)
DG 5	Lake Cowal
DG 6	Gumbelah residence
DG 7	Lake Cowal residence
DG 8	Native flora area
DG 9	Hillgrove residence, native flora area
DG 10	Native flora area
McLintock's Shed	General monitoring site
Geology Site Office	General monitoring site
Lakeside	General monitoring site
DG I5	General monitoring site

Table19. Dust monitoring sites within the CGM Mine Lease Area

Dust Gauge	Site Location Rationale
DG 11	General monitoring site (proximal to site infrastructure areas)
DG 12	General monitoring site (proximal to site infrastructure areas)
DG 13	General monitoring site (proximal to site infrastructure areas)
Site 52	Continuation of baseline monitoring prior to development consent

4.14.5 Review of Dust Monitoring Results[1]

A review of the air quality monitoring results for the Cowal Gold Project during 2014 was conducted by Associate Professor Stephen Cattle of the Faculty of Agriculture and Environment, University of Sydney. The conclusions of the review in relation to dust deposition and Total Suspended Particulates were:

- Temporal and spatial variation in monthly dust deposition in 2014 was moderate, and only slightly greater than that experienced in 2013. There was a moderate correlation between monthly dust deposition and season in 2014, with the spring and early summer months being distinctly more dusty than the late autumn and winter months. This indicates that regional æolian processes were more prominent than isolated local processes in 2014..

- Compliance with the assessment criterion of 4g/m^2/month average annual deposited dust was achieved at 12 out of 13 gauges outside the Mining Lease Area during 2014. Compliance was achieved at all but one residence, and at all bird-breeding and native fauna areas.

- For the single gauge external to the Mining Lease Area that exceeded the assessment criterion of 4g/m^2/month (DG7), the exceedance was largely due to more than 55% of the material being combustible, suggesting a large contribution of insects, bird droppings and vegetative matter. Exclusion of the combustible fractions of these dust deposits would result in the annual average dust deposition rate for DG7 below the assessment criterion.

- The HVAS, located to the north of the Mining Lease Area, yielded TSP levels well below the relevant NSW EPA amenity criterion of 90 µg/m^3.

- No complaints about dust were received from surrounding land owners between May 2013 and May 2015.

4.14.6 Conclusions

The Dust Management Plan (2009) and Air Quality Management Plan were prepared to satisfy Development Consent 14/98 MOD 11. The dust management plans were implemented for the CGM operations and compliance with the impact assessment criteria was achieved at all but one residence and all bird-breeding and native fauna areas. The dust data collected from the monitoring program is reviewed annually by Dr Stephen Cattle of University of Sydney. No complaints in relation to dust were received by CGM between May 2013 and May 2015.

4.15 Blasting

[Development Consent 14/98 MOD 10 condition 6.3]
[Development Consent 14/98 MOD 11 condition 6.3]
[Environment Protection Licence condition L5]
[Mining Lease 1535 condition 27]

4.15.1 Blast and Vibration Management Plan

[Development Consent 14/98 MOD 10 condition 6.3(b)]
[Development Consent 14/98 MOD 11 condition 6.3(e)]

The Blast Management Plan May 2010 was prepared to satisfy Development Consent 14/98 MOD 10 condition 6.3 and the management of blasting at CGM has occurred in accordance with the Blast Management Plan.

[1] Interpretation and Discussion of 2014 Air Quality Monitoring Results, Prof. Stephen Cattle University of Sydney

The Blast Management Plan prepared to satisfy Development Consent 14/98 MOD 11 condition 6.3(e) was submitted to DP&E on 29 January 2015 and approved on4 February 2015.

The Blast Management Plan provides a sound basis for the control of noise and vibration impacts from the mining activities and the procedures and blast methodology conform with best practice as outlined in current regulatory guidelines (*Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration*, ANZECC, *Assessing Vibration: a technical guideline* DECCW, and Australian Standards).

The commitments outlined in the approved Blast Management Plan are summarised in Table 17.

Table 17: Blast Management Plan Commitments

Section/ Page No.	Blast Management Plan Commitments	Comments
2.3.2 /7	If adverse bird breeding impacts are attributed to Project blasting activities, blast remedial measures will be implemented as directed by the EPA and in consultation with the NPWS(MCoA 6.3(i))	No demonstrable disturbance of bird breeding was noted during the 2013-2014 period. Ongoing independent observations of bird breeding areas have been conducted annually by Professor Peter Gell and Paul Peake in 2013 to 2014.
3/7	Residents within 2 km of the active mining area are to advised on a monthly basis, regarding future blasting events and of any changes to monthly blast programs (MCoA 6.3(ii))	No residents are currently within 2 km of the active mine area.
4/9	All blasts will be designed to minimise the probability of any one blast exceeding the 115 dB (Linear Peak) or 5 mm/s PVS criteria at the closest non-Company owned residences outside the DA area and bird breeding/roosting to less than 5% (MCoA 8.4(b)(ii))	Optimised blasts are designed to mitigate environmental impact. Pre-Splits are restricted to approximately 100 holes and blast events are separated by at least 1 minute for histogram analysis.
5.1/11	Monitoring of near-by residences and bird breeding areas will be undertaken for all blast events (MCoA 8.4(b)(i) and (v)).	Monitoring locations have been established to the satisfaction of the EPA and DRE.
5.1/11	As part of the blast monitoring program, meteorological conditions (including temperature, wind speed and direction) will be monitored at the time of blasting and recorded for each blast.	Meteorological conditions are taken into account for each blast by the Blast Controller and blast overpressure results are assessed annually by The Saros Group.
5.1/11	The blast monitoring programme is to be revised / updated annually, unless otherwise directed by the D-G, to reflect changing environmental requirements, significant changes in technology /operational practices and results from monitoring conducted (MC0A 8).	The Blast Management Plan was updated in May 2010. Revision of internal blasting practices is a continuous improvement activity. New SAROS Blast Hub technology has been installed with event logging when blast overpressure >115 dB(L) is triggered. Greater than 95 dB(L) over-pressure results have occurred on Sundays and Public Holidays. Detection of blast overpressure has been enhanced since mid-2012 flood recovery works with the installation of new generation ancillary equipment that includes anemometers & wind direction measurements into the new loggers to better identify any localised environmental factors.

Section/ Page No.	Blast Management Plan Commitments	Comments
5.2.1/12	Data from the on-site meteorological station will be used to determine whether conditions are suitable for blasting. The meteorological monitoring station will be maintained for the life of the Project to: • assist in the prediction of noise, dust and blast impacts at nearby residences/bird breeding areas; and • to provide data at the time of each blast as part of the blast design iterative process (MCoA 8.1)	All employees have access to CGM weather station data via employee login. Kattron real-time lightning detection array system Has been installed for the Mining Dispatch, Main Gatehouse and Processing Control Room operations screens. E-mail alerts go out to all employees and are displayed as coloured flashing light status warnings around Site.
5.3/12	Barrick is required to undertake remedial measures if blasting overpressure demonstrably disturbs bird breeding (MCoA 6.3(i))	No demonstrable disturbance of bird breeding was noted during the 2013-2015 period by the ongoing independent observations of bird breeding areas conducted by Professor Peter Gell and Paul Peake, University of Ballarat.
5.3.1	Baseline surveys will be continued to provide monitoring data during project operations. The information from these surveys is essential to examine whether a demonstrable disturbance to bird breeding can be attributed to the mine's activities at any point during the life of the mine.	The initial 10 blasts conducted at the CGM were monitored to assess the potential impact on waterbirds - no impact was observed. Independent Lake Cowal waterbird usage surveys have occurred in January, August and October by Professor Peter Gell and Paul Peake.
6/14	In the event that the >120 dB air-blast overpressure criteria is exceeded or demonstrable disturbance of bird breeding occurs, strategies (including a review of the strategy) and implementation of a response strategy and procedures to deal with these blasts will be applied (MCoA 6.3(i)).	No blast overpressure of greater than 120dBL occurred between May 2013 and May 2015.
7/15	All blasts will be designed to comply with applicable criteria but in the event that monitoring indicates air-blast overpressure at dwellings are in excess of 120dB or, if monitoring of bird breeding indicates demonstrable disturbance, mitigation measures will be considered and applied as directed by the EPA and in consultation with NPWS in relation to bird breeding disturbance (Blast Management Plan Section 5.3 and MCoA 6.3(i)).	If required implementation of mitigation measures directed by the EPA in consultation with NPWS, will occur in relation to bird breeding disturbance (Blast Management Plan Section 5.3). No mitigation measures have been required by EPA/NPWS between 2013 and 2015.
7/16	Barrick will implement adaptive management of blasting and following the implementation of any remedial measures, continued blast monitoring will provide feedback on the effectiveness of the implementation of the remedial measures to determine if any additional measures are required. In the event of demonstrable bird breeding disturbance, the monitoring, review and response strategies will be continued, in consultation with NPWS, until bird breeding monitoring indicates any effects from blasting activities have been mitigated.	Revision of internal practices related to blasting has occurred since mid-2011. New Saros Blast Hub technology has been installed with event logging triggered when blast overpressure > 115 dB(L). Detection of blast overpressure with the new technology with the next generation of SAROS equipment includes anemometers & wind direction measurements by the new loggers. CGM blasts are designed to mitigate environmental impact by optimising size of blast. Pre-Split blasts are restricted to around 100 holes and blast events separated by at least 1 minute to provide for histogram

Section/ Page No.	Blast Management Plan Commitments	Comments
		analysis. Additional remedial measures will be adopted if required.
17/22	Ensure AEMR is prepared and submitted	Annual Environmental Management Reports (AEMR prepared by CGM in accordance with Development Consent MOD 11 condition 9.1(b) address Blast management and overpressure/ vibration in AEMR section 3.10.

4.15.2 Blast and Vibration Criteria

[Development Consent 14/98 MOD 10 condition 6.3(a)]
[Development Consent 14/98 MOD 11 condition 6.3(a)]
[Environment Protection Licence condition L5]
[Mining Lease 1535 condition 27]

Blasts impact assessment criteria defined are specified in Development Consent 14/98 MOD 10 condition 6.3(a) and Development Consent 14/98 MOD 11 condition 6.3(a).

Table 4.15.2: Blasting impact assessment criteria

Location	Time of Blasting	Air-blast over pressure dBL	Ground Vibration mm/s	Allowable exceedance
Residence on privately owned land	Any time	120	10	0%
	Monday to Saturday during day	115	5	5% of total number of blasts over a period of 12 months
	Monday to Saturday during evening	105	2	
	Monday to Saturday at night	95	1	
	Sundays and Public Holidays	95	1	

The Sunday and Public Holiday overpressure level of 95dB(L) is a significant reduction to the normal Monday to Saturday limit of 115dB(L). The 20dB(L) reduction is equivalent to reducing the Monday to Saturday limit by 90% for Sunday and Public Holiday blasting (The Saros Group Report, section 3.2, March 2015.

4.15.3 Review of Blast Overpressure Monitoring

All blasts were monitored for overpressure and vibration at the following fixed locations, with one mobile/portable monitor available for random checks.

Table 4.15.3a: Fixed blast monitoring locations

Blast Monitor No.	Blast Monitor Location	Blast Location Classification
BM01 BM02 BM03 BM08.1	Gumbelah residence Hillgrove Residence Coniston Residence Cowal North	Locations categorised as '*residence on privately owned land*' [Development Consent 14/98 MOD 11 condition 6.3(a)]
BM04.1 BM05	Northern Bird Breeding area Southern Bird Breeding area,	*'Lake monitoring'* locations positioned to assess the impacts on and around Lake Cowal.

Blast Monitor No.	Blast Monitor Location	Blast Location Classification
BM06	General	
BM09 BM10	Southern Lake Near Field Monitor	'*Reference monitoring*' location

Enhanced technology has been installed in the land-based cabinets of blast monitoring units around Lake Cowal. Inundated blast monitoring units in Lake Cowal (i.e. BM04, BM05 and BM06) were replaced due to access related to Lake Cowal inundation, with enhanced technology units mounted on taller tripod stands in mid-2012.

The Annual Review of Blast Monitoring Results (conducted by SAROS) concluded that blast overpressure and vibration levels were compliant with the Development Consent 14/98 MOD 11 condition 6.3(a), EPL conditions L7.3 and L7.4, and Mining Lease condition 27 (i.e. less than 5% of total blasts must not exceed 115dBL or vibration levels must not exceed 2mm/sec) for the total number of 382 blasts between January 2014 and December 2014 for the Monday to Saturday daytime hours.

The Sunday and Public Holiday criterion of 95 dB(L) was exceeded on ten (10 occasions) between January 2014 and December 2014 when the exceedance was assessed as being blast related.

The Annual Review concluded:

- No blast related events exceeded the maximum compliance level of 120dB(L);
- Less than 5% of blasts exceeded 115dB(L) or 2mm/sec, on normal weekdays and Saturdays;
- Ten (10) of the twenty-six (26) instances where the blast related events exceeded the 95 dB(L) level on Sundays and Public Holidays (refer to Table 4.14.3b), the exceedance resulted from ambient wind speed and direction (as determined by meteorological data assessed by The SAROS Group).

Table 4.15.3b: Blast Monitoring Exceedances January 2013 to March 2014

Date	Location	Overpressure Exceedance	Comments
Sunday, 29 December 2013	BM01-Gumbelah Residence BM02-Hillgrove BM03-Coniston BM04-Northern Bird Breeding area BM05-Southern Bird Breeding area BM06-General	BM01 (100.0dB(L)) BM02 (98.8 dB)L)) BM03 (95.9 dB(L)) BM04 (97.5 dB(L)) BM05 (104.9 dB(L)) BM06 (101.0 dB(L))	Local environmental factors, unable to differentiate from background levels.
Wednesday, 1 January 2014 (Public Holiday)	BM06-General	BM06 (98.8 dB(L))	Likely blast related
Sunday 12 January 2014	BM02- Hillgrove	BM02 (100.0dB(L))	Local environmental factors, unable to differentiate from background levels.
Sunday, 26 January 2014	BM01-Gumbelah Residence	BM01 (101.0dB(L))	Likely blast related
Sunday, 2 February 2014	BM01-Gumbelah Residence	BM01 (95.9dB(L))	Likely blast related
Sunday, 9 February 2014	BM04-Northern	BM04 (100.0 dB(L))	Local environmental factors, unable to differentiate from background levels.
Sunday, 9 March 2014	BM01 - Gumbelah Residence, BM02 – Hillgrove Residence, BM04 - Northern Bird Breeding,	BM01 (98.8 dB(L)) BM02 (97.5dB(L)) BM04.1 (98.8dB(L)) BM05 (95.9dB(L))	Likely blast related

Date	Location	Overpressure Exceedance	Comments
	BM05 – Southern Bird Breeding area		
Sunday 6 April 2014	BM04-Northern	BM04 (97.5 dB(L))	Likely blast related
Sunday 19 April 2014	BM01-Gumbelah Residence BM02-Hillgrove BM03-Coniston BM04-Northern Bird Breeding area	BM01 (97.5 dB(L)) BM02 (102.8dB(L)) BM03 (103.5 dB(L)) BM04 (95.9dB(L))	Likely blast related
Sunday 1 June 2014	BM01- Gumbelah Residence	BM01 (95.9 dB(L))	Likely blast related
Sunday 15 June 2014	BM01 - Gumbelah Residence, BM03-Coniston BM05 – Southern Bird Breeding area	BM01 (95.9 dB(L)) BM03 (97.5 dB(L)) BM05 (97.5 dB(L)),	Local environmental factors, unable to differentiate from background levels.
Sunday 29 June 2014	BM01 - Gumbelah Residence, BM02 – Hillgrove Residence, BM05 - Southern Bird Breeding area, BM06 – General	BM01 (103.5 dB(L)) BM02 (104.9dB(L)) BM05 (100.0 dB(L)) BM06 (95.9dB(L)),	
Sunday 6 July 2014	BM01 - Gumbelah Residence, BM02 – Hillgrove Residence, BM04.1-Northern Bird Breeding area BM05 - Southern Bird Breeding area, BM06 – General	BM01 (103.5 dBL) BM02 (104.9dB(L) BM4.1 (98.8 dBL) BM05 (100.0 dBL) BM06 (95.9 dB(L))	
Sunday, 20 July 2014	BM03-Coniston	BM03 (100.0 dB(L))	Likely blast related
Sunday, 10 August 2014	BM05 - Southern Bird Breeding area	BM05 (103.5dB(L))	Local environmental factors.
Wednesday, 10 September 2014	BM8.1-Cowal North	BM8.1 (115.0 dB(L))	Likely blast related
Sunday 14 September 2014	BM8.1-Cowal North	BM8.1 (109.9 dB(L))	Local environmental factors, unable to differentiate from background levels.
Sunday 21 September 2014	BM8.1-Cowal North	BM8.1 (97.5 dB(L))	
Sunday 28 September 2014	BM02 – Hillgrove Residence	BM02 (102.8 dB(L))	
Sunday 26 October 2014	BM02-Hillgrove BM03-Coniston	BM02 (97.5 dB(L)) BM03 (97.5 dB(L))	
Monday 27 October 2014	BM02 - Hillgrove BM4.1 - Northern Bird Breeding area BM05 - Southern Bird Breeding area BM8.1- Cowal	BM02 (117.4 dB(L)) BM4.1 (115.9 dB(L)) BM05 (117.7 dB(L)) BM8.1 (118.3 dB(L))	Local environmental factors, unable to differentiate from background levels.
Sunday 2 November 2014	BM01-Gumbelah Residence BM02-Hillgrove BM03-Coniston	BM01 (98.8 dBL) BM02 (104.9dB(L) BM03 (101.9 dB(L))	Likely blast related
Sunday 9 November 2014	BM8.1 - Coniston	BM8.1 (95.9 dB(L))	Local environmental factors, unable to differentiate from back ground levels.
Sunday 16 November 2014	BM8.1 – Cowal North	BM8.1 (110.9 dB(L))	
Sunday 23 November 2014	BM05 - Southern Bird Breeding area BM8.1 – Cowal North	BM05 (116.3 dB(L)) BM8.1 (112.3 dB(L))	
Sunday 30 November 2014	BM02-Hillgrove	BM02 (103.5dB(L))	

Date	Location	Overpressure Exceedance	Comments
Sunday 16 December 2014	BM02-Hillgrove	BM02 (115.4 dB(L))	

*	Monday to Saturday during day	Air-blast overpressure 115 dBL	Likely blast related
*	Sundays& Public Holidays	Air-blast overpressure 95 dBL	Likely blast related
*	Sundays& Public Holidays	Air-blast overpressure 95 dBL	Local environmental factors, unable to differentiate from background levels

4.15.4 Review of Vibration Results

Based on the monitoring data and blasting information available, recorded levels of ground vibration induced by blasting activities conducted at the Cowal Gold Mine were compliant with respect to the ground vibration compliance limits.

100% of ground vibration results were compliant with Development Consent 14/98 MOD 10 condition 6.3(a), Development Consent 14/98 MOD 11 condition 6.3(a), [Environment Protection Licence condition L5, and Mining Lease 1535 condition 27 (i.e. ground vibration (peak particle velocity) to be less than 5mm/s).

The maximum blast induced vibration level at the nearest residence was 0.20mm/s recorded at BM03-Coniston Residence on the 4th August 2014.

4.15.5 Blast Complaints

No blast complaints were received between May 2014 and May 2015.

4.15.5 Conclusion

The Blast Management Plan provides a sound basis for the control of noise and vibration impacts from the mining activities and the procedures and blast methodology conform to best practice as outlined in current regulatory guidelines.

Blast overpressure and vibration monitoring from January 2014 to April 2015 demonstrated compliance for all blasts conducted between Monday and Saturday with the criteria specified in the Development Consent/EPL/ML conditions.

Non-compliance related to blast overpressure that exceeded the 95 dB(L) level on Sundays and Public Holidays on ten occasions between January 2014 and December 2015, were assessed as a result of ambient wind speed and direction (as determined by meteorological data assessed by The Saros Group). Other instances where the blast related events exceeded the 95 dB(L) criteria were described as due to local environmental factors, and were not able to be differentiated from background levels.

4.16 Noise

[Development Consent 14/98 MOD 11 condition 6.4]

4.16.1 Noise Management Plan

[Development Consent 14/98 MOD 11 condition 6.4(e)]

The Noise Management Plan was prepared to satisfy the requirements of MCoA 6.4(b) in consultation with the DEC, and approved by DIPNR in November 2004.

A Noise Management Plan prepared to satisfy condition Development Consent 14/98 MOD 11 condition 6.4(e) was submitted to DP&E on 14 November 2014 and approved on 5 March 2015.

The Noise Management Plan provides the procedures to be implemented for the management of noise impacts from the CGM activities.

Commitments in the Noise Management Plan are listed in Table 18.

Table 18: Noise Management Plan Commitments

Section/ Page No.	Noise Management Plan Commitments	Comments
s.6.2.2/p21	Monitoring will be undertaken quarterly to enable seasonal variations in noise impacts to be established.	Operator attended noise monitoring has been conducted quarterly each year by SLR or Spectrum Acoustics and reported to Barrick. Monitoring has been carried out on 21-24 July 2014 (last SLR report), 22-24 October 2014, 21-22 January 2015 and 14-15 April 2015 by Spectrum Acoustics.
s.6.2.3/p21	The on-site meteorological station located near the southern ML 1535 boundary provides meteorological data for predicting noise impacts on nearby residences and bird breeding areas. and measures real-time wind speed / direction, standard deviation of wind direction, temperature (2m and 10 m), barometric pressure, humidity, solar radiation and rainfall (Development Consent Schedule 4 condition 6.2))	The on-site meteorological station located near the southern ML 1535 boundary provides meteorological data and measures real-time wind speed and direction, temperature (2m and 10 m), barometric pressure, humidity, solar radiation and rainfall (Development Consent Schedule 4 condition 6.2)
s.6.1/p20	Monitoring will be conducted at near-by residences and bird breeding areas to evaluate, assess and report the $LAeq_{(15\ minute)}$ noise emission levels due to normal operations of the mine.	Monitoring at near-by residences and bird breeding areas has been carried out by SLR and Spectrum Acoustics and reported quarterly during 2014 and 2015.
s.6.2.4/p21	The occurrence of any temperature inversions will be compared with noise complaint details to determine whether any higher level of impacts or patterns of temperature inversions have occurred.	Meteorological conditions are available on a continuous basis from the on-site meteorological station and this data is used during assessment of any noise complaints lodged with CGM.
s.6.1/p202	Monitoring locations DECCW, 18 August 2009 were: • NO1 – New Lake foreshore; • NO5 – "Gumbelah" residence; • NO9 – Lakebvirew residence • N10 – "Bramboyne" residence; • N11 – "Laurel Park" residence; • N12 – "The Glen" residence; and • N14 – "Hillgrove Barrick-owned (reference site).	The noise monitoring locations were approved in July 2014 for quarterly monitoring conducted by SLR and Spectrum Acoustics
s.6.2 /p21	Operator attended noise monitoring will be conducted quarterly at the noise monitoring locations with an integrating averaging sound	Quarterly operator attended noise monitoring is conducted by Spectrum Acoustics and the results including the

Section/ Page No.	Noise Management Plan Commitments	Comments
	level meter over a 15 minute period on at least one occasion during the daytime (7.00 am to 6.00 pm) and evening (6.00 pm to 10.00 pm). During the survey, the operator will identify the character and duration of acoustically significant noise sources.	character and duration of the noise sources reported.
s.6.2.7 /p23	Compliance will assessed against noise criteria given in Section 3/p10 of the NMP.	The quarterly reports assess compliance against the criteria.
s.9/p28	A complaints register will be maintained by the Community Relations Manager (EPL Cond. M5.1).	CGM has a 24hour complaints line (02) 6975 3454. CGM uses External Communications component of the Responsibility Information Management System (RIMS) to track public complaints.
s.12/p32	A CEMCC will be set up for the CGM (MCoA 8.7).	The CEMCC was established in 2003 and the inaugural meeting of the CEMCC occurred on 15 October 2003. The CEMCC has met quarterly since October 2003.
s.17/p53	The AEMR will be prepared (Development Consent Schedule condition 9.1).	The Annual Review will be submitted in May 2015. Annual Environmental Management Reports (AEMR) prepared by CGM in accordance with Development Consent 14/98 MOD 10 condition 9.2, includes noise management and monitoring results in section 3.11.

4.16.2 Noise Criteria

[Development Consent 14/98 MOD 11 condition 6.4(c)]

Noise assessment criteria specified in Development Consent 14/98 MOD 11 condition 6.4(c) requires that noise emitted from the Cowal Gold Mine activities does not exceed the following levels at any residence on privately-owned land:

Land	Day/Evening/Night
Laurel Park	37 dB(A) $L_{Aeq\,(15\ min)}$
Bramboyne, Bungabulla, The Glen and Gumbelah	36 dB(A) $L_{Aeq\,(15\ min)}$
All other privately-owned land	35 dB(A) $L_{Aeq\,(15\ min)}$

4.16.3 Noise Monitoring Program

[Development Consent 14/98 MOD 11 condition 6.4(e)(iii)]

Quarterly attended noise monitoring surveys conducted in accordance with Noise management Plan section 6 – Noise Monitoring Program. The noise monitoring has been conducted to monitor potential impact of noise on residences and wildlife.

The noise monitoring program (Development Consent 14/98 MOD 11 condition 6.4(e)(iii) - Noise Management Plan section 6.1) was conducted at the following locations:

Location No.	Location	Monitoring Source	Noise Assessment Criteria dB(A) $L_{Aeq\ (15\ min)}$	Noise Monitoring Results, July 2014 - April 2015
N01	New Lake Foreshore	NMP (reference site)	44	All <44
N05	Gumbelah residence (SE)	EPL condition L4.1	36	All < 36
N09	Lakeview residence (W)	NMP (reference site)	36	All <36
N10	Bramboyne residence (NW)	EPL condition L4.1	36	All < 36
N11	Laurel Park (NW)	EPL condition L4.1	37	All <37
N12	The Glen (N)	EPL condition L4.1	36	All <36
N13	Bungabulla (SE)	EPL condition L4.1	36	All <36
N14	Hillgrove" (Barrick-owned) (SW)	NMP (reference site)	35	All <35

4.16.4 Review of Noise Monitoring Results

The results from noise monitoring surveys conducted in July 2014 (SLR) and October 2014 and January and April 2015 (Spectrum Acoustics), demonstrated that at the times under the operating and meteorological conditions, the mine noise dB(A) $L_{Aeq\ (15\ min)}$ did not exceed the operational noise criterion at any monitoring location at any time.

Data from monitoring when CGM operations were audible at the monitoring location were analysed using the *"Evaluator"* software. This analysis showed the noise did not contain any tonal, impulsive or low frequency components as per definitions of *"modifying factor corrections"* in the NSW Industrial Noise Policy.

The dB(A) $L_{1eq\ (1\ min)}$ noise results under the operating and meteorological conditions did not exceed the sleep disturbance criterion at any monitoring location during the night time measurement periods.

Noise monitoring summary of the attended surveys between July 2014 and April 2015 were

- Operations noise surveys were conducted by SLR July 2014 and Spectrum Acoustics in October 2014 and January and April 2015.
- The SLR Report July 2014 concluded: *All operator attended noise recordings were measured to be below the Consent criteria during all periods of the day at all locations monitored. Consequently, the CGM was observed to be in compliance with the relevant noise requirements during all periods of the operator-attended noise monitoring and Digital Audio Recorder noise monitoring*.
- The results for the Spectrum Acoustics October 2014 and January 2015 surveys showed that: "*under the operating and meteorological conditions at the times, for the 15 minute compliance measurement periods, the mine noise did not exceed the operational noise criterion at any monitoring location at any time*."
- It was advised by CGM that the April 2015 report for the Spectrum Acoustics indicated that the CGM operation was again compliant with conditions.

- No noise assessment level exceedences were recorded between the May 2014 and May 2015 audit period.

- Noise Mitigation Agreements were settled with "Gumbelah", "Laurel Park" and "Cowal North" land owners in accordance with Development Consent 14/98 MOD 10 condition 6.4(c) during 2014.

4.16.5. Complaints

No noise related complaints were received during the audit period (May 2014 to April 2015).

4.16.6 Conclusions

The Noise Management Plan prepared to satisfy the requirements of Development Consent 14/98 MOD 10 condition 6.4(g) was implemented for the CGM operations until March 2015. The revised Noise Management Plan prepared to satisfy Development Consent 14/98 MOD 11 condition 6.4(e) and approved by DP&E on 5 March 2015 is now current for the CGM operations.

The implementation of the control strategies outlined in the Noise Management Plan have minimised noise emissions from the CGM and are considered to be best practice and effective as demonstrated by the noise monitoring data and environmental performance indicators.

Operational noise surveys have demonstrated that CGM is operating in compliance with the noise assessment criteria imposed in the Development Consent and EPL conditions, and commitments made in the Environmental Assessment. No operator attended noise monitoring results exceeded the noise assessment criteria, between the May 2014 and April 2015.

4.17 Independent Monitoring Panel

The Independent Monitoring Panel established in accordance with Development Consent 14/98 MOD 10 condition 8.8(b) and Development Consent 14/98 MOD 11 condition 9.2(b) has prepared an Annual Report for the Cowal Gold Project.

The IMP has also reviewed the Independent Environmental Audits prepared under Development Consent 14/98 MOD 10 condition 8.8(a) and made the following comments:

> *"The independent environmental auditors reviewed the available documentation covering licenses and approvals granted by Government for the project as well as the environmental monitoring documentation held by Barrick at the mine site office in order to verify compliance with the conditions of approval.*
> *As mentioned in previous IMP reports, the independent environmental auditors established a logical framework for verifying compliance by setting out the entire list of requirements, in the separate management plans that have been prepared by Barrick, that cover environmental management under the Minister's Conditions of Approval.*
> *Thus the IMP made the recommendation that "Barrick consider continuing use of the template-based approach established by aemc for environmental auditing of operations in order to regularly and systematically update progress on each of the environmental management and monitoring components. This approach would greatly assist the IMP in its annual review."*

Barrick responses to the Ninth IMP Report recommendations and subsequent assessment of Barrick actions by the IMP in September 2014 are presented in Table 4.17.

Table4.17: Barrick responses to the Ninth IMP Report recommendations

Ninth IMP Report October 2013		
IMP Recommendation	**Barrick Response to IMP Recommendations**	**IMP Assessment of Barrick Response to Recommendations**
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, finalised the design for the Northern Waste Rock Emplacement Trial and implementation of the trial has been completed. The DnA Environmental 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).	The IMP noted that CGM had moved forward with the design and planting of the Northern Waste Rock Emplacement Trials, and it was able to view the trials during the site visit. It was noted that, to reduce the complexity of the trial, direct-seeded plots were deleted. While this was of concern, the IMP believes the commitment to direct seed (and monitor) approximately 12 ha of the inner batters of the Perimeter Waste Rock Emplacement in late 2014/early 2015 should provide a good test of the efficacy of this revegetation technique
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 tube-stock supply strategy for the CGM on-site rehabilitation program and offset revegetation and enhancement program. The Greening Australia strategy addresses propagation methods, site preparation, planting procedures and post-planting maintenance measures. The Greening Australia draft strategy was expected to be available for Barrick review by November 2014.	Enlistment of Greening Australia's input in this area is to be commended and should provide complementary support to that available from local contractors.
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 continued 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:	The IMP noted that CGM had taken three specific actions to better define the benefits or otherwise of saved subsoil as a component of the root zone, viz. (1) additional root growth assessments of tube-stock previously planted into plots of the Southern Waste Rock Emplacement Trial,

Ninth IMP Report October 2013		
	• engaged DnA Environmental to design a 'substrate profile' trial 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 tube-stock planted directly in substrates including oxide waste, subsoil and topsoil in the Southern Waste Rock Emplacement Trial area; 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 program.	(2) design of a substrate trial in large boxes and (3) engagement of a soil science consultant to characterise all topsoil and subsoil resources stockpiled at the mine. CGM is to be commended for commissioning the report on Soil Stockpile Characterisation Assessment by McKenzie Soil Management (in conjunction with Carnegie Natives Pty Ltd). The report is comprehensive and fulfils recommendation 1 made by the IMP in its 2011 report. Information in the soil report will allow CGM to more accurately assess its usable soil resources and determine the gypsum requirements for each of the different soil resources.
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 to improve the process of dust sample preparation and metals analysis. These measures 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 existing dust monitoring program and the replicate dust gauge samples; and • reporting all dust monitoring program results in the AEMR.	The IMP is satisfied with these measures

Recommendations made by the IMP during the September 2014 site inspection and Tenth IMP Report are presented in Table 4.17b.

Table 4.17b: Tenth Independent Monitoring Panel Report Recommendations

Tenth IMP Report 2014	
IMP Recommendation September 2014	**Action Observed during the Independent Environmental Audit (April 2015)**
2014 IMP Recommendation 1: CGM should continue to monitor all existing rehabilitation trials and those to be established in 2014/2015 (direct- seeded native species areas) with a view to continually refine its approach to achieving large-scale sustainable rehabilitation. Particular attention should be paid to the landform design, rehabilitation materials, rehabilitation cover system and revegetation concepts defined in the 2014 CGM Rehabilitation Risk Assessment (draft of May 2014).	Monitoring of all existing rehabilitation trials during 2014/2015 (direct- seeded native species areas) was continuing by DnA Environmental.
Recommendation 2: That watering continue over summer until seedlings have established their roots, and that plant available water in the soil be monitored to guide watering if above average dry conditions continue.	Watering of the seedlings on the batters of the waste emplacement occurred during 2014 /2015.
Recommendation 3: That raising of the TIB is conducted in a manner that ensures protection of the naturally recruited river red gum saplings and swale habitats.	Raising of the temporary isolation bund had not occurred at the date of the Independent Environmental Audit (April 2015)
Recommendation 4: That the requirement to deconstruct or breach the TIB be reconsidered based on an assessment of the naturally developing habitat and biodiversity values of the structure.	Agreed.

4.17.2 Conclusion

The Independent Monitoring Panel (IMP) Reports prepared annually have provided a useful third party review of the status of the CGM activities in relation to environment and rehabilitation issues. Barrick has responded to the IMP recommendations in a timely manner and has addressed the requirements within the subsequent 12 month IMP review period where practicable.

5. Conclusions and Recommendations

The independent environmental audit was conducted between 20 and 24 April 2015 to satisfy Development Consent 14/98 MOD 11 condition 9.2(a) and assessed compliance of the CGM operations for the mining and ore processing, for the period of 1 May 2014 to 30 April 2015.

The CGM operated under Development Consent 14/98 MOD 10 until 22 July 2014 when Development Consent 14/98 MOD 11 was granted. The CGM operations have been undertaken under the MOD 11 conditions after 22 July 2014. This audit has assessed compliance of the CGM with the Development Consent 14/98 MOD 11 conditions between May 2014 and 30 April 2015.

Site inspections, document review and discussions with relevant CGM personnel were undertaken during 20 and 24 April 2015 with additional information for verification of compliance with the Development Consent 14/98 provided by Barrick as requested by the auditor following the site visit.

The files held by Barrick at the CGM site and information from CGM personnel on site provided the auditor with the required documentation for verification of implementation of the commitments in the environmental management plans and compliance with the Development Consent 14/98 and other statutory approvals.

The audit findings confirm an overall high standard of general compliance with the Minister's Conditions of Approval, Environment Protection Licence and requirements of the environmental conditions attached to the Mining Lease 1535.

Non-compliance related to blast overpressure that exceeded the 95 dB(L) level on Sundays and Public Holidays on ten occasions between January 2014 and December 2015, were assessed as a result of ambient wind speed and direction (as determined by meteorological data assessed by The Saros Group). Other instances where the blast related events exceeded the 95 dB(L) criteria were described as due to local environmental factors, and were not able to be differentiated from background levels.

Attachment A
DA 14/98 – Consolidated Consent MOD 11

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
1.1	Adherence to terms of DA, EIS, SIS, etc.			
	The Development is to be carried out generally in accordance with: (i) EIS; and (ii) conditions of this consent. *Note: The general layout of the development is shown in Appendix 1.*	• EIS, North Gold (WA) Ltd, prepared by Resource Strategies, 13 Mar 1998; • Environmental Assessment - Cowal Gold Mine Extension Modification 12 September 2013, Resource Strategies	The CGM has been developed generally in accordance with the 1998 EIS, Commission of Inquiry submissions, supporting documentation, the Development Consent 14/98 Conditions of Approval and Modifications to the Development Consent granted under the *Environment Planning and Assessment Act 1979*.	**Compliant Ongoing**
1.1(b)	If there is any inconsistency between the above documents, the latter document shall prevail over the former to the extent of the inconsistency. However, the conditions of this consent shall prevail over all such documents to the extent of any inconsistency.			**Noted**
1.1(c)	The Applicant shall comply with any reasonable requirements of the Secretary arising from the Department's assessment of: (i) any strategies, plans, programs, reviews, reports, audits or correspondence that are submitted in accordance with this consent (including any stages of these documents); (ii) any reviews, reports or audits commissioned by the Department regarding compliance with this consent; and (iii) the implementation of any actions or measures contained in these documents.			**Noted**
1.2	***Period of Approval/Project Commencement***			
	(i) Mining operations may take place until 31 December 2024. *Note: Under this approval, the Applicant is required to rehabilitate the site and perform additional undertakings to the satisfaction of the D-G and DII (Minerals). Consequently this approval will continue to apply in all other respects other than the right to conduct mining operations until the site has been properly rehabilitated.*	• Letter from DMR Mining Application No. 45 – Cowal Gold Project, 18 June 2003	Mining Lease (ML 1535) was granted on 13 June 2003 and mining operations commenced on 21 April 2005. The development consent will continue to apply until the site has been properly rehabilitated.	**Noted**
	(a) The Applicant shall not process more than 7.5 million tonnes of ore on site in any calendar year.			**Compliant**
	The Applicant shall comply with the following maximum heights: (i) Northern Rock Emplacement - 308 m AHD;		The development of the Cowal Gold Mine under Development Consent 14/98 MOD 11 will occur in	**Noted**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	(ii) Southern Rock Emplacement - 283 m AHD; (iii) Southern Tailings Storage Facility - 255 m AHD; (iv) Northern Tailings Storage Facility - 248 m AHD; and (v) Perimeter Rock Emplacement - 233 m AHD.		accordance with the requirements of the project approval conditions.	
	(b) The Applicant shall not carry out any construction work on the Tailings Storage Facility embankments outside of the hours of 7 am to 6 pm.		Construction work on the Tailings Storage Facility(s) embankments are only conducted between 7 am to 6 pm.	**Compliant Ongoing**
1.3	**Structural Adequacy**			
	The Applicant shall ensure that all new buildings and structures on site, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA. *Note: Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates (where applicable) for the proposed building works. Part I of the EP&A Regulation sets out the requirements for the certification of the development.*		No new buildings and structures were built on the site during 2014 and May 2015.	**Noted**
1.4	**Demolition**			
	The Applicant shall ensure that all demolition work undertaken on site is carried out in accordance with AS 26012001: The Demolition of Structures, or its latest version.			**Compliant**
1.5	**Protection of Public Infrastructure**			
	Unless the Applicant and the applicable authority agree otherwise, the Applicant shall: (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and (b) relocate or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development. *Note: This condition does not apply to any damage to roads caused as a result of general road usage.*		No public infrastructure was damaged or relocated during 2014 and May 2015.	**Noted**
1.6	**Operation of Plant and Equipment**			
	The Applicant shall ensure that all plant and equipment used on site, or to monitor the performance of the development, is maintained and operated in a proper and efficient manner.		Plant and equipment used on site, and equipment and instruments used to monitor the performance of the CGM development, is maintained and operated in a proper and efficient manner.	**Compliant Ongoing**
1.7	**Staging and Updating Strategies, Plans or Programs**			
	To ensure the strategies, plans and programs under this consent are updated on a regular basis, and that they		The strategies, plans and programs under Development Consent 14/98 have been revised and updated on a	**Noted**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	incorporate any appropriate additional measures to improve the environmental performance of the development, time submit revised strategies, plans or programs to the Secretary for approval with the agreement of the Secretary, the Applicant may also submit any strategy, plan or program required by this consent on a staged basis. The Secretary may approve a revised strategy, plan or program required under this approval, or the staged submission of any of these documents, at any time. With the agreement of the Secretary, the Applicant may prepare a revision of or a stage of a strategy, plan or program without undertaking consultation with all parties nominated under the applicable condition in this consent *Note: While any strategy, plan or program may be submitted on a staged basis, the Applicant will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times. If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*		regular basis as necessary. The strategies, plans and programs to meet the requirements of Development Consent 14/98 MOD 11 were being prepared at the date of this audit (23 April 2015).	
1.8	**Dispute Resolution**			
	In the event that the Applicant and the BSC or any Government agency, other than the Department, cannot agree on the specification or requirements applicable under this consent, the matter shall be referred by either party to the Secretary for resolution. The Secretary's determination on the dispute shall be final and binding on the parties.			**Noted**
2	**MINE MANAGEMENT**			
2.1	***Mine Management Plan, Operations and Methods***			
	The Applicant shall prepare and implement a Mining Operations Plan for the development to the satisfaction of DRE. This plan must be prepared in accordance with any current guidelines issued for such plans by DRE, and should include a geotechnical analysis and review of ongoing open pit development, the management of waste rock emplacements, and continued monitoring of the lake protection bund.	• Letter from DI&I re Approval of MOP Jan 2011 to Sep 2012, 30 Mar 2011 • Letter to DTIRIS re Variation to MOP, 5 Apr 2012 • MOP Oct 2012 to Jan 2014 • Letter to DT&I- DRE re Extension of MOP to 31 Jan 2015, 27 Sep 2013 • Letter from DT&I-DRE re Approval of MOP Extension, 4 Oct 2013	A MOP for January 2011 to September 2012 was submitted to DI&I and accepted on 30 March 2011. A Variation to the MOP was requested in a letter to DTIRIS on 5 April 2012 for the Southern Tailings Storage Facility (fourth lift) and the Northern Waste Rock Emplacement (storage volume elevation increase). On 4 October 2013, the D-G of the DTIRIS-DRE granted Barrick an extension to the term of the previous *Cowal Gold Mine Mining Operations Plan (ML 1535) October 2012 – January 2014*) to 31 January 2015 to align with the resubmission of the Modification before DP&I.	**Compliant**

<table>
<tr><th>No.</th><th>DA 14/98 Minister's Condition of Approval</th><th>Verification</th><th>Comments</th><th>Compliance</th></tr>
<tr><td></td><td></td><td>• Draft MOP April 2014 to April 2016</td><td>A Mining Operations Plan (MOP) was prepared by Barrick in accordance with the requirements of the Mining Lease 1535 condition 25, Development Consent 14/98 condition 2.1 and the NSW Department of Trade and Investment, Regional Infrastructure and Services – Division of Resources and Energy (DTIRIS-DRE) ESG3: Mining Operations Plan (MOP) Guidelines, September 2013 (the MOP Guidelines) (DTIRIS-DRE, 2013). This MOP describes the proposed operational mining activities for the approved CGM for the period 30 April 2014 to 30 April 2016.</td><td></td></tr>
<tr><td>2.2</td><td>Ore, Waste and Concentrate Production</td><td></td><td></td><td></td></tr>
<tr><td></td><td>The Applicant shall not transport ore or other excavated materials not required for either construction or maintenance works from other mines or locations to the mine site without the written approval of the relevant councils.</td><td></td><td>No ore or excavated materials from other mines or locations have been transported to the CGM site between May 2003 and April 2015.</td><td>Compliant</td></tr>
<tr><td>2.3</td><td>Mine and Public safety</td><td></td><td></td><td></td></tr>
<tr><td></td><td>The Applicant shall secure the mine site as described in section 2.10.5 of the EIS. The fence for the MLA boundary shall be designed to minimise the impact on water birds and aquatic species.</td><td></td><td>A 1.3m wire strand fence was erected around the Mining Lease Area in 2004 in accordance with the design requirements. The MLA boundary fence is maintained by CGM.</td><td>Compliant</td></tr>
<tr><td>2.4</td><td>Rehabilitation</td><td></td><td></td><td></td></tr>
<tr><td>(a)</td><td>Rehabilitation Objectives</td><td></td><td></td><td></td></tr>
<tr><td></td><td>The Applicant shall rehabilitate the site to the satisfaction of DRE. This rehabilitation must be generally consistent with the proposed rehabilitation in the EIS (which is depicted in the Figure in Appendix 2) as amended by the approved rehabilitation strategy (see condition 3.8), and comply with the objectives in Table 1.
Table 1 : Rehabilitation objectives
<table>
<tr><th>Feature</th><th>Objective</th></tr>
<tr><td>Mine site
(as a whole</td><td>• Safe, stable and non-polluting. Final landforms designed to incorporate micro-relief and integrate with surrounding natural landforms.
• Constructed landforms are to generally drain to the final void.
• Minimise long term groundwater seepage zones.
• Minimise visual impact of final landforms as far as is reasonable and feasible</td></tr>
</table></td><td>• Rehabilitation and Offset Management Plan, Dec 2010</td><td>The Rehabilitation and Offset Management Plan (dated December 2010) was prepared to satisfy Development Consent 14/98 MOD 10 condition 3.6(b).
The overall objectives of the rehabilitation program to meet the requirements of Development Consent 14/98 MOD 11 condition 2.4(c) are:
• Revegetating the new landforms with selected species of native and/or endemic vegetation that are both suitable to the physiographic and hydrological features of each landform, and which expand on the areas of remnant endemic vegetation that currently exist in the immediate region.
• The placement (wherever possible) of soils on final landforms to enable the progressive establishment of vegetation. This requires that the placed covers are of sufficient depth and properties to absorb and store rainfall.
• The expansion of habitat opportunities for wetland and terrestrial fauna species including the design and</td><td>Compliant Ongoing</td></tr>
</table>

No.	DA 14/98 Minister's Condition of Approval		Verification	Comments	Compliance
	Final void	• Minimise to the greatest extent practicable: - the size and depth of final void; - the drainage catchment of final void; - risk of flood interaction for all flood events up to and including the Probable Maximum Flood; • To be permanently separated from Lake Cowal by the Lake Protection Bund. • Highwall to be long term stable		implementation of rehabilitation works at the New Lake Foreshore in a manner consistent with the NSW Wetlands Policy (DECCW, 2010c).	
	Surface infrastructure	• To be decommissioned and removed, unless DRE agrees otherwise			
	Agriculture	• Restore or maintain land capability generally as described in the EIS			
	Rehabilitation areas and other vegetated land	• Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems			
	Community	• Ensure public safety. • Minimise adverse socio-economic effects associated with mine closure			
(b)	**Progressive Rehabilitation**				
	The Applicant shall rehabilitate the site progressively as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilization and rehabilitation strategies shall be employed when areas prone to dust generation cannot be permanently rehabilitated. *Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the development.*			Progressive rehabilitation of disturbed areas of the CGM MLA is occurring as soon as reasonably practicable in accordance with the MOP.	**Compliant Ongoing**
(c)	**Rehabilitation Management Plan**				
	The Applicant shall prepare and implement a Rehabilitation Management Plan for the development to the satisfaction of DRE. This plan must: (i) be prepared in consultation with the Department, NOW, OEH, DPI, BSC and the CEMCC; (ii) be prepared in accordance with any relevant DRE guideline;		• Rehabilitation Management Plan, Feb 2015 • Letter to OEH re Rehabilitation Management Plan, 13 Feb 2015 • Letter to NOW re Rehabilitation Management Plan, 13 Feb 2015 • Letter to DP&E re Rehabilitation Management Plan, 24 Feb 2015	The Rehabilitation Management Plan for the CGM was being prepared to satisfy Development Consent 14/98 MOD 11 condition 2.4(c) at the date of this audit (23 April 2015). A draft of the Rehabilitation Management Plan was submitted to the relevant agencies on 13 February 2015: **Rehabilitation Management Plan**	**In progress**

<table>
<tr><th>No.</th><th>DA 14/98 Minister's Condition of Approval</th><th>Verification</th><th>Comments</th><th>Compliance</th></tr>
<tr><td></td><td>(iii) describe how the rehabilitation of the site would be integrated with the biodiversity offset strategy for the development;
(iv) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary);
(v) describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent, and address all aspects of rehabilitation including mine closure, final landform (including final voids) and final land use;
(vi) include interim rehabilitation where necessary to minimise the area exposed for dust generation; (vii) include a program to monitor, independently audit and report on the effectiveness of the measures, and progress against the detailed performance and completion criteria; and
(viii) build to the maximum extent practicable on the other management plans required under this consent.</td><td>• Letter from DP&E re Approval of Rehabilitation Management Plan, 24 Feb 2015</td><td><table><tr><th>Agency for comments</th><th>Date Submitted for Comment</th><th>Date Response Received</th></tr><tr><td>DP&E</td><td>13 Feb 2015</td><td>24 Feb 2015</td></tr><tr><td>OEH</td><td>13 Feb 2015</td><td>13 Mar 2015</td></tr><tr><td>NOW</td><td>13 Feb 2015</td><td>18 Feb 2015</td></tr><tr><td>DPI(Fisheries)</td><td>13 Feb 2015</td><td>26 Feb 2015</td></tr><tr><td>BSC</td><td>13 Feb 2015</td><td>18 Feb 2015</td></tr><tr><td>CEMCC</td><td>13 Feb 2015</td><td>27 Mar 2015</td></tr></table>The Rehabilitation Management Plan was revised to address the responses from the agencies and the revised Plan re-submitted to DP&E on 13 April 2015.</td><td></td></tr>
<tr><td>2.5</td><td>Security Deposits and Bonds</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Security deposits and bonds will be paid as required by DRE under mining lease approval conditions.</td><td></td><td></td><td>Noted</td></tr>
<tr><td>3</td><td>HERITAGE, FLORA AND FAUNA AND LAND MANAGEMENT</td><td></td><td></td><td></td></tr>
<tr><td>3.1</td><td>Heritage Management</td><td></td><td></td><td></td></tr>
<tr><td>(a)</td><td>The Applicant shall:
(i) prepare and implement a Heritage Management Plan for the development to the satisfaction of the Secretary. The plan shall be prepared in consultation with Bland District Historical Society, BSC, and Lake Cowal landholders/residents and address non-indigenous cultural heritage issues associated with the development;
(ii) prepare and implement an Indigenous Archaeology and Cultural Management Plan for the development to the satisfaction of the Secretary. The plan shall be prepared in consultation with NPWS, the Local Aboriginal Land Council, a consultant archaeologist, any other stakeholders identified by NPWS; and identify future salvage, excavation and monitoring of any archaeological sites within the DA area prior to and during development, and to address Aboriginal cultural heritage issues; and
(iii) retain a Cultural Heritage Officer approved by the West Wyalong Local Aboriginal Land Council who is to be available on site during construction earthworks.</td><td>• Heritage Management Plan Sept 2003
• Letter from BSC re European Heritage Management Plan, 25 Sep 2003
• Letter from DIPNR re Approval of the Indigenous Archaeology and Cultural Heritage Management Plan, 11 Nov 2003
• Letter to DP&E re Indigenous Archaeology and Cultural Heritage Management Plan, 2 Apr 2015
• Letter from DP&E re Indigenous Archaeology and Cultural Heritage Management Plan, 10 Mar 2015
• Letter to DP&E re Indigenous Archaeology and Cultural Heritage Management Plan, 2 Apr 2015</td><td>(a)(i) A Heritage Management Plan was prepared and approved on 25 September 2003 in consultation with the Bland District Historical Society, BSC, and Lake Cowal landholders/ residents. The Heritage Management Plan was reviewed during 2015 and DP&E was advised on 10 March 2015 no revision was necessary.
(a)(ii) The Indigenous Archaeology and Cultural Management Plan prepared in consultation with the NPWS, Wiradjuri-Condobolin Cultural Heritage Company. Dr Colin Pardoe (Principal Consulting Archaeologist) was approved by DoP on 11 November 2003. The Indigenous Archaeology and Cultural Management Plan was reviewed in 2015 and a letter to DP&E provided to advise no revision was required. DP&E responded on 10 March 2015 with comment that "reference to approvals, and requirement for monitoring results to be published on the company website."</td><td>Compliant</td></tr>
</table>

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
			(a)(iii) Cultural Heritage Officers provided by WCC, (under Dr Colin Pardoe) undertake archaeological site survey/ investigations prior to any land disturbance or earthworks at the CGM mine lease site, as required.	
(b)	The Applicant shall monitor the effectiveness of measures outlined in the Heritage Management plan and Indigenous Archaeology and Cultural Management Plan to the satisfaction of the Secretary. A summary of the monitoring results is to be published annually on the Applicant's website for the development.	• Indigenous Archaeology and Cultural Heritage Management Plan 2003 • 2012 AEMR • 2013 AEMR • 2014 Annual Review	The management of Aboriginal heritage has been undertaken in accordance with the Indigenous Aboriginal and Cultural Heritage Management Plan. The monitoring of management actions and registered sites/items have been reported in the AEMR section 3.13.	**Compliant**
3.2	**Flora and Fauna Management**			
(a)	The Applicant shall: (i) minimise the removal of trees and other vegetation from the mine site and restrict any clearance to the areas occupied by the mine activity, buildings and paved surfaces, and those areas necessary for fire control in accordance with BSC's requirements, and have regard to the draft Mid-Lachlan Regional Vegetation Management Plan (or its final version); (ii) not locate topsoil stockpiles within any area of Wilga Woodland in the DA area as identified in Figure 3-13 in the 1998 EIS (Appendix 3); and (iii) not disturb any area of Belah Woodland in the DA area as identified in Figure 3-13 in the 1998 EIS.	DECC, DPI (Minerals) and DoP accepted the implementation of the Vegetation Clearance Protocols related to the Inland Grey Box Woodland in August 2007, and Myall Woodland in August/ September 2007. • Letter from DoP re Inland Greybox Woodland, 10 Aug 2007 • Letter from DECC re Inland Greybox Woodland, 27 Aug 2007 • Letter from DECC re Myall Woodland, 29 Aug 2007 • Letter from DECC re Aquatic Ecological Community, 21 Sep 2007 • Letter from DoP re Myall Woodland, 24 Sep 2007 • Letter from DoP re Aquatic Ecological Community, 12 Oct 2007	(i) The Vegetation Clearance Protocol (VCP) has ensured that clearance of vegetation has been restricted to areas required for mine development. The VCP has been triggered and the Vegetation Clearance Procedure instigated in areas of the project site where vegetation clearance was to occur between April 2007 and April 2012 and detailed reports on each of these areas are contained in, *Cowal Gold Project: Vegetation Clearance Protocol Reports* files. (ii) No topsoil stockpiles have been located on Wilga Woodland areas ; (iii) Belah Woodland areas within the MLA have not been disturbed.	**Compliant**
(b)	The Applicant shall prepare and implement a Flora and Fauna Management Plan for the development to the satisfaction of the Secretary. The shall be prepared in consultation with DPI (Fisheries) and OEH, and cover the mining lease area and monitoring of bird breeding areas as identified by the Applicant in consultation with OEH. The plan shall include, but not be limited to:	• Flora and Fauna Management Plan Nov 2012	The Flora and Fauna Management Plan for CGM was approved by the Director General on 30 October 2003. An amended Flora and Fauna Management Plan was approved on 30 October 2008. A revised Flora and Fauna Management Plan for Development Consent 14/98 MOD 10, including a Threatened Species Management Strategy was submitted to DP&I in 13 November 2012. The requirements of the Flora and Fauna Management Plan were implemented for the CGM project.	**Compliant**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
			A Flora and Fauna Management Plan to satisfy the requirements of Development Consent 14/98 MOD 11 condition 3.2(b)and the Threatened Species Management Protocol is reported in the AEMR in sections 3.7 a was being prepared at the date of this audit (23 April 2015).	

	(i) methods for monitoring daily and seasonal fauna usage of tailings dams (e.g. species, number, location, habits), and whether deaths or other effects or incidents are occurring. Usage of the tailings dams shall be reported to the OEH on a six monthly basis, unless otherwise directed by the Secretary;	• Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Donato Environmental Services:
		  • Apr 2013 to Sep 2013
		  • Oct 2013 to Mar 2014
		  • Jul to 31 Dec 2014
		• Letter to EPA re Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Donato Environmental Services, 13 Feb 2015
		• Letter to DP&E re Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Donato Environmental Services, 13 Feb 2015
			(i) Flora and Fauna Management Plan Section 6 prepared for Development Consent 14/98 MOD 10 has the protocol for the reporting of any native fauna deaths or other incidents involving native fauna on the mining lease.
			Monitoring of the tailings storage facilities occurs twice a day and is conducted by process plant staff plus regular inspections by the Environment staff. The six-monthly Donato reports on seasonal wildlife use of the tailings facility have been submitted to DECCW/OEH and the reports conclude:
			"No deaths on the tailings storage facilities have been recorded and cyanide concentrations have been consistently below the level that would expected to cause mortality" (Donato 2013- 2014).
				Compliant Ongoing

	(ii) development of a protocol for the reporting of any native fauna deaths or other incidents involving native fauna on the mining lease to the OEH, DRE, CEMCC and in the case of fish, DPI (Fisheries). Native fauna deaths (except those attributable to physical trauma such as vehicle strike) must be reported as per this protocol within 24 hours (or next working day).The Applicant shall maintain a record of any native fauna deaths or other incidents and this record must be published annually on the Applicant's website for the development;	• Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Donato Environmental Services:
		  • April 2013 to Sep 2013
		  • Oct 2013 to Mar 2014
		  • Jul 2014 to Dec 2014
			(i) the development of a protocol for the reporting of any native fauna deaths or other incidents involving native fauna on the mining lease to satisfy the requirements of Development Consent 14/98 MOD 11 condition 3.2(b) was being prepared in the Flora and Fauna Management Plan at the date of this audit (23 April 2015).	**Compliant**

	(iii) provision for fauna autopsy facilities to enable the cause of any deaths to be quickly determined. The protocol required in sub clause (ii) above shall also detail collection and autopsy of fauna. This shall include but not be limited to collection and recording procedures, autopsy procedures and laboratory tests;	• Flora and Fauna Management Plan Section 6.3 • Letters to DPI/DECC/DoP re Native Fauna Incident Notifications, July 2008 to February 2009 • West Wyalong Veterinary Clinic Reports 2010 to Mar 2012	(iii) arrangements for the conduct of fauna autopsies to determine the cause of death have been arranged with the West Wyalong Veterinary Clinic. Autopsy reports are prepared by the West Wyalong Veterinary Clinic and the reports provided to Barrick. No deaths attributable to cyanide in the tailing storage areas were reported during the May 2014-April 2015 period.	**Compliant**
	(iv) provision of contingency measures for reducing cyanide levels in the tailings dams in the event it is	• Flora and Fauna Management Plan Section 8	(iv) Cyanide levels in the discharge to the tailings storage facilities have been compliant with the approved concentration criteria for all samples	**Compliant**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	established that fauna deaths are occurring from cyanide in tailings dam water;	• Monthly Cyanide Monitoring Data, Jan 2014 to Apr 2015 • 2010 to April 2011 • 2013 AEMR • 2014 Annual Report	collected between May 2013 and April 2015. No fauna deaths related to cyanide have been recorded for the tailings storage facilities on the CGM site.	

	(v) development of effective mechanisms to keep fauna and avifauna away from the tailings storages, which shall include, but not be limited to:
	• minimising the area of open water in the tailings dams;
	• fencing to prevent both medium and large fauna, terrestrial and amphibians, from entering the area. Mesh will have holes no greater than 5cm in diameter;
	• making the area non conducive to the establishment of wildlife habitats, as far as possible;
	• use of netting where practical; and . use of current best practice methods for avifauna deterrence;
		• Flora and Fauna Management Plan Section 3
		• Implementation Plan to Protect Fauna from Interactions with the Tailings Storage Facilities, Feb 2005
		• Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Donato Environmental Services:
		  • Apr 2011 and Sep 2011,
		  • Oct 2011 and Mar 2012,
		  • April 2012 to Oct 2012
		  • Nov 2012 to Mar 2013
		  • April 2013 to Sep 2013
		  • Oct 2013 to Mar 2014
		  • Jul 2014 to Dec 2014
			(v) A security fence was erected around the tailings storage facilities prior to tailings being discharged in 2005, to restrict the entry of terrestrial fauna. The security fence entrance gate to the TSF is closed except during entrance of vehicles and equipment to the tailings facilities.
			Deterrent devices have been installed at the tailings storage facilities with radar activated audio units, sonic gas guns and other passive devices to scare any avifauna approaching or landing on the tailings water. These devices were installed in 2006 in accordance with the approaches outlined in the Implementation Plan.
			The monitoring of wildlife visitation to the tailings storage facilities has indicated no wildlife deaths due to cyanide and cyanide levels have been consistently below the level that would be expected to result in mortality. The six monthly Donato reports have been prepared to assess the requirements in the CGM Implementation Plan to protect fauna from interaction with the Tailings Storage Facilities sites.
				Compliant

	(vi) development of plans for the rescue and rehabilitation of wildlife that may become bogged/sick/trapped in the tailings dams or elsewhere within the mining lease area;	• Flora and Fauna Management Plan Section 5	(vi) A small number of birds have been rescued from the tailings storage facilities during 2014 and April 2015. Management of water on the tailings storage facilities has kept the area of exposed water to a minimum (by returning supernatant water to the process plant). The number of birds attracted to the tailings has been small because of the lack of water on the storages.	**Compliant Ongoing**
	(vii) methods to conserve and enhance wildlife values around Lake Cowal, within the mine lease area, including: protection and enhancement of existing retained habitats;	• Flora and Fauna Management Plan Section 9	(vii) Protection of habitat around the Lake Cowal foreshore within the MLA has resulted in establishment of native tree species following the inundation of Lake Cowal in 2010.	**Compliant Ongoing**
	(viii) provision to continue fauna and flora, fish, and aquatic invertebrate monitoring of the Lake Cowal region as documented in the EIS including investigation of fauna deaths off site if requested by	• Surface, Groundwater, Meteorological and Biological Monitoring Program	(viii) Biological monitoring has occurred on Lake Cowal between 2010 and 2014 during the period of inundation of the water in the lake when the water level was above the 204.5 AHD trigger level.	**Compliant Ongoing**

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	the Secretary where it is considered the deaths are attributable to activities on the site;			
	(ix) details to relocate any threatened species and/or its habitat away from disturbed areas that are created by mine operations. This will include placement and maintenance of suitable types and numbers of artificial roosting boxes for bats such as the Greater Long-eared Bat and other animals (eg birds/possums) in undisturbed areas of the mine site; and	• Flora and Fauna Management Plan Section 10, Oct 2008 • Flora and Fauna Management - Plan Threatened Species Management Protocol Nov 2012	(ix)The Threatened Species Management Protocol was initiated during 2006 and 2007 for the relocation of active Grey-Crowned Babblers (a threatened species under the NSW *Threatened Species Conservation Act*) nesting sites in an area where vegetation clearance was required. A revision of the Threatened Species Management Protocol for the Inland Forest Bat, Sloanes Froglet and Woodland birds was accepted by the DECCW on 23 February 2011 and submitted to DoP on 13 November 2012. The Threatened Species Management Protocol was not triggered between May 2014 and April 2015.	**Compliant Ongoing**
	(x) details of monitoring the mine's impacts particularly on birdlife in bird breeding areas identified by the Applicant in consultation with OEH, threatened fauna and flora, and fish and aquatic invertebrates around Lake Cowal, and outline contingency measures should impacts be identified as occurring.	• Flora and Fauna Management Plan Section 11, Oct 2008 • Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Oct 2009 to March 2010, Donato Environmental Services, Aug 2010 • Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Apr 2010 to Oct 2010, Donato Environmental Services, Feb 2011 • Waterbird Monitoring Survey Progress Report, Centre for Environmental Management University of Ballarat , Jan 2011 • Waterbird Monitoring Survey Progress Report, Centre for Environmental Management University of Ballarat , Aug 2011 •	(x) The fauna, flora, fish and aquatic invertebrates monitoring has been conducted in accordance with the Surface Water, Groundwater, Meteorology and Biological Monitoring Program. Monitoring surveys of waterbirds and bird breeding areas has been conducted around the mine site and Lake Cowal area by Dr Peter Gell and Paul Peake, Centre for Environmental Management University of Ballarat, three times a year since the lake filled in 2010. The reports provide survey results of species and estimates of numbers of individual species identified at the monitoring locations. A fish and aquatic invertebrate survey was conducted during February 2011 - the primary findings of the survey were that the fish communities in the study area were species-poor and were dominated by eastern gambusia that accounted for 98% of the catch, with the remaining 2% comprising goldfish and common carp. The Donato reports on seasonal wildlife use patterns at the CGM site have not provided evidence that suggested impacts from the mine operations on any threatened fauna on the site.	**Compliant Ongoing**
(c)	The Applicant shall implement a Threatened Species Management Protocol for the development to the satisfaction of the Secretary, which will include provisions for targeted searches prior to construction and proposed mitigation measures where threatened flora or fauna species are found.	• Flora and Fauna Management Plan Appendix A - Threatened Species Management Protocol, Oct 2003 • Letter from DECCW re Threatened Species Management	(c)A Threatened Species Management Protocol was prepared as part of the Flora and Fauna Management Plan and approved by the Director General on 30 October 2003.	**Compliant Ongoing**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
		Strategies for Inland Forest Bat, Sloanes Froglet and Woodland Birds, 23 Feb 2011	DECC, DPI (Minerals) and DoP accepted the Threatened Species Management Strategy for the Aquatic Ecological Community in the natural drainage system of the Lowland Catchment of the Lachlan River in September 2007. The threatened species management strategies for the Inland Forest Bat, Sloanes Froglet and Woodland Birds were submitted to and accepted by DECCW without objections on 23 February 2011 and submitted to DP&I. The Threatened Species Management Protocol and Vegetation Clearance Protocol are current and implemented for any new areas where clearance of vegetation and/or disturbance of threatened species would occur.	
(d)	The Applicant shall monitor the effectiveness of measures outlined in the Flora and Fauna Management Plan and Threatened Species Protocol to the satisfaction of the Secretary. A summary of these monitoring results shall be published annually on the Applicant's website for the development.	•	The monitoring of fauna, flora, fish and aquatic invertebrates is conducted in accordance with the Flora and Fauna Management Plan and Surface Water, Groundwater, Meteorology and Biological Monitoring Program. Results will be published on the company website.	**Compliant**
3.3	**Compensatory Wetland Management Plan**			
	The Applicant shall prepare and implement a Compensatory Wetland Management Plan for the development to the satisfaction of the Secretary. The plan shall be prepared in consultation with OEH and DPI(Fisheries), Lake Cowal Landowners Association, and Lake Cowal Environmental Trust, and detail compensation measures for the loss of 120 hectares of wetland, through the enhancement of at least the equivalent area of existing wetland within the mine lease area during operation and following closure of the mine. The plan shall include, but not be limited to: (a) a definition of wetland which shall be all land up to the high water mark of Lake Cowal recognising that river red gum habitat is below high water mark; (b) measures to manage the enhanced wetlands without adversely impacting adjoining private properties; and (c) measures to improve habitats for wildlife including waterbirds, fish, aquatic organisms etc, in the wetlands covered by the plan.	• Compensatory Wetland Management Plan,25 Sep 2003 • Compensatory Wetland Management Plan, Oct 2008 •	A Compensatory Wetland Management Plan was submitted and approved by the Director-General on 25 September 2003. The Plan was reviewed in 2008 and no revision was required. The Compensatory Wetland Management Plan addressed the requirements of this condition: (a) section 3 of the Compensatory Wetland Management Plan defines a wetland in accordance with the NSW Wetlands Management Policy; (b) section 7 addresses measures to manage the enhanced wetlands without adversely impacting adjoining private properties; and (c) section 6 addresses measures to improve habitats for wildlife in the wetlands covered by the plan.	**Compliant**
3.4	**Biodiversity Offset Strategy**			
(a)	The Applicant shall implement the biodiversity offset strategy summarised in Table 2, shown conceptually in Appendix 4,			**Compliant Ongoing**

<table>
<tr><th>No.</th><th>DA 14/98 Minister's Condition of Approval</th><th>Verification</th><th>Comments</th><th>Compliance</th></tr>
<tr><td></td><td>and described in detail in the EIS to the satisfaction of the Secretary.
Table 2: Summary of Biodiversity Offset Strategy
<table>
<tr><th>Area</th><th>Minimum Size</th></tr>
<tr><td>Northern Offset Area</td><td>110 ha</td></tr>
<tr><td>Southern Offset Area</td><td>100 ha</td></tr>
<tr><td>Southern Offset Area Extension (Mod 11)</td><td>230 ha</td></tr>
<tr><td>Total</td><td>440 ha</td></tr>
</table></td><td>• Rehabilitation and Offset Strategy, Dec 2010
• Letter to DP&I re Long Term Security of Offset Areas (VCA Application), 19 Jun 2012
• Letter to DP&I re VPA, 28 Apr 2014</td><td>The proposed offset land is owned by Barrick (part of the 'Lakeview' and 'Hillview' properties) and is secured for the long term use as offset areas.
CGM proposed preparation of a Voluntary Conservation Agreement in consultation with OEH in December 2011. The OEH responded on 17 May 2012 stating that "from a preliminary assessment the proposed Northern Offset Area appears to be of low conservation value and is not likely to be suitable for a Conservation Agreement." Barrick suggested to DP&I a Voluntary Planning Agreement (VPA) as an appropriate mechanism for securing the offset areas and submitted a draft Voluntary Planning Agreement for the offset areas to DP&I on 28 April 2014.
Barrick is awaiting a response from DP&E in relation to the VPA for the long term protection of the biodiversity offset areas submitted to DP&I on 28 April 2014.</td><td>Administrative Matter</td></tr>
<tr><td>(b)</td><td>By the end of July 2015, unless the Secretary agrees otherwise, the Applicant shall make suitable arrangements for the long term protection of the biodiversity offset areas in Table 2 to the satisfaction of the Secretary.</td><td></td><td></td><td></td></tr>
<tr><td>(c)</td><td>The Applicant shall prepare and implement a Biodiversity Offset Management Plan for the development to the satisfaction of the Secretary. This plan must be prepared in consultation with OEH, and include:
(i) a description of the short, medium, and long term measures that would be implemented to:
• implement the biodiversity offset strategy; and
• manage the remnant vegetation in the offset areas; and ¡ integrate the implementation of the biodiversity offset strategy to the greatest extent practicable with the rehabilitation of the site.
(ii) -
(iii) detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy, and triggering remedial action (if necessary);
(iv) a detailed description of the measures that would be implemented for: . enhancing the quality of existing vegetation and fauna habitat in the biodiversity offset areas; . creating native vegetation and fauna habitat in the biodiversity offset areas; o maximising the salvage of resources from the disturbance areas on site, including the vegetative and soil resources - for beneficial use in the biodiversity offset areas; . collecting and propagating seed; ¡ controlling weeds and feral pests; . controlling erosion; . managing any grazing; . controlling access; and . bushfire management;</td><td>• Letter to OEH re Biodiversity Offset Management Plan, 25 Feb 2015
• Letter from OEH re Comments on Biodiversity Offset Management Plan, 13 Mar 2015</td><td>A Biodiversity Offset Management Plan was being prepared to satisfy Development Consent 14/98 MOD 11 condition 3.4(c) at the date of this audit (23 April 2015), for submission to DP&E in May 2015.</td><td>Compliant Ongoing Administrative Matter</td></tr>
</table>

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	(v) a seasonally-based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria; (vi) a description of the potential risks to successful implementation of the biodiversity offset strategy, and the contingency measures that would be implemented to mitigate against these risks; and (vii) details of who would be responsible for monitoring, reviewing, and implementing the plan.			
(d)	By the end of July 2015, unless otherwise agreed by the Secretary, the Applicant shall lodge a Conservation Bond with the Department to ensure that the biodiversity offset strategy is implemented in accordance with the performance and completion criteria in the Biodiversity Offset Management Plan. The sum of the bond shall be determined by: (i) calculating the full cost of implementing the biodiversity offset strategy (other than land acquisition costs); and (ii) employing a suitably qualified and experienced person to verify the calculated cost to the satisfaction of the Secretary. The calculation of the Conservation Bond must be submitted to the Department for approval at least 1 month prior to the lodgement of the bond. If the offset strategy is completed generally in accordance with the completion criteria in the Biodiversity Offset Management Plan to the satisfaction of the Secretary, the Secretary will release the bond. If the offset strategy is not completed generally in accordance with the completion criteria in the Biodiversity Offset Management Plan, the Secretary will call in all, or part of, the conservation bond, and arrange for the completion of the relevant works. *Note: Alternative funding arrangements for long-term management of the biodiversity offset strategy, such as provision of capital and management funding as agreed by OEH as part of a Biobanking Agreement or transfer to conservation reserve estate can be used to reduce the liability of the conservation and biodiversity bond. The sum of the bond may be reviewed in conjunction with any revision to the Biodiversity Offset Management plan.*		A proposed total offset bond amount of $339,570.00 for implementation for the offset strategy within the mine closure security bond was submitted to DII Titles as part of the MOP Rehabilitation bond (dated April 2010). The VPA submitted to DP&I on 28 April 2014 included a calculation of $1.7M determined by Greening Australia for an offsets bank guarantee to be lodged with DP&I.	**Compliant Ongoing Administrative Matter**
3.5	***Prevention of Soil Erosion***			
(a)	The Applicant shall prepare and implement the following plans to the satisfaction of the Secretary: (a) an erosion and sediment control management plan for the	• Amended Erosion and Sediment Control Management Plan, 2004	(a)The Erosion and Sediment Control Plan prepared for the CGM site development was approved in 2003, amended in 2004, and revised in December 2009.	**Compliant**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	site which shall include, but not be limited to: (i) details of temporary and permanent sediment and erosion control systems to be used during both mine construction and operation, including for earthworks associated with landscaping; (ii) details of salinity management; and (iii) a program for reporting on the effectiveness of the sediment and erosion control systems and performance against objectives contained in the approved erosion and sediment control ' management plan, and EIS; and	• Revised and Amended Erosion and Sediment Control Plan Dec 2009 • Letter from DoP re Revised Erosion and Sediment Control Plan, 10 March 2010 • Letter to DP&E re Addendum to Erosion and Sediment Control Plan, 24 Feb 2015	DoP approved the Plan on 10 March 2010. An Addendum to the Erosion and Sediment Control Plan was provided to DP&E on 24 February 2015. (i) Erosion and Sediment Control Plan section 3 addresses temporary and permanent sediment and erosion control systems to be used during both mine construction and operation; (ii) Erosion and Sediment Control Plan section 6 addresses details of salinity management; (iii) Erosion and Sediment Control Plan section 11 addresses reporting on the effectiveness and performance of sediment and erosion control systems.	
(b)	a soil stripping management plan for the site which shall include, but not be limited to: (i) details of the management of soil stockpiles, soil stripping techniques and scheduling; (ii) any further requirements of DRE; and (iii) a program for reporting on the effectiveness of the soil stripping methods and performance against objectives contained in the soil stripping management plan, and EIS.	• Soil Stripping Management Plan Aug 2003 • Topsoil-Subsoil Stockpile Map Apr 2012 • Topsoil-Subsoil Stockpile Map Mar 2013 • Topsoil-Subsoil Stockpile Map Mar 2014 • Letter to DP&E re Revised Soil Stripping Management Plan, 4 Feb 2015	A Soil Stripping Management Plan was approved by DPNIR in 2003 and the requirements of the Soil Stripping Management Plan were implemented for any new areas of clearance (e.g. northern and southern waste emplacement areas and tailings storage facilities in 2010-2014. (i) CGM site topsoil stockpile database is maintained for recording topsoil clearance activities on site. The location and volume of topsoil present on each of the stockpiles is recorded and the locations shown on stockpile maps for the site. (ii) The stripping of topsoil and stockpiles have been managed on the CGM MLA in accordance with the Soil Stripping Management Plan. (iii)The topsoil stockpile database is updated as new stockpile information is obtained, with a location map developed for the site. The segregation of topsoil and other infill material occurs as the material is stripped.	**Compliant**
3.6	**Bushfire Management**			
	The Applicant shall: (a) ensure the development is suitably equipped to respond to any fires on site; and (b) assist the RFS and emergency services as much as practicable if there is a fire in the vicinity of the site	• Bushfire Management Plan, Aug 2003 • Letter from BSC re Bushfire Management Plan, 5 Aug 2003 • Memorandum of Understanding, Bland-Temora Rural Fire Zone NSW Rural Fire Service and Cowal Gold Mine, 20 Feb 2007	(a) A Bushfire Management Plan was prepared for the CGM site and the plan was approved by DMR and BSC on 24 July 2003. The Bushfire Management Plan has been reviewed and no revision of the document was required. (b) CGM has two Category 7 fire tenders and two emergency firefighting units of approximately 1000L each housed in an Emergency Response Station on the CGM site near the main maintenance workshop. CGM can assist any RFS brigades (Wamboyne, Clear Ridge and Blow Clear) with response to fire in the vicinity of the CGM site.	**Compliant**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
3.7	**Land Management**			
	The Applicant shall prepare and implement a Land Management Plan for all its land holdings to the satisfaction of the Secretary. The plan shall be prepared in consultation with OEH, NOW, DPI(Agriculture) and BSC, be consistent with the Flora and Fauna Management Plan, provide for proper land management including, but not limited to: (a) pastures and remnant vegetation management; (b) control of vermin and noxious weeds as required by the Local Lands Services, BSC and other relevant authorities; (c) integration of the latest versions of the Jemalong Land and Water Management Plan and the Lake Cowal Land and Water Management Plan; and (d) feral animal control.	• Land Management Plan Oct 2008 • Compensatory Wetland Management Plan Oct 2008 • Compensatory Wetland Regeneration Monitoring Results Report, DnA Environmental, 2013 • Compensatory Wetland Regeneration Monitoring Results Report, DnA Environmental, Feb 2014 • Land Management Plan (draft revised) 2015	A Land Management Plan was prepared by Barrick and approved by the Director General in October 2003. The Land Management Plan was reviewed in 2008 and no revision was required. A Land Management Plan to satisfy Development Consent 14/98 MOD 11 condition 3.7 has been prepared and submitted to DP&E in April 2015 for approval. The current Land Management Plan includes: (a) sections 4 and 5 addresses pasture and remnant vegetation management; (b) sections 6 and 7 address control of vermin and noxious weed control; and (c) section 2 integration of the Jemalong and Lake Cowal Land and Water Management Plan; and (d) section 7 addresses feral animal control.	**Compliant**
3.8	**Rehabilitation Strategy**			
	The Applicant shall develop a strategy for the long term land use of the DA area on decommissioning of the mine site. The strategy shall include, but not be limited to appropriate land uses within the DA area, which may include areas for conservation, agriculture or recreation, long term management of the area, environmental impacts of any uses and maintenance of necessary drainage characteristics and other features provided on the site. The strategy for long term land use of the DA area shall be submitted by Year 7 of mining operations or five years before mine closure, whichever is the sooner, in consultation with NOW, OEH, BSC, CEMCC, and to the satisfaction of the Secretary.		The Rehabilitation Strategy is not required until Year 7 of the mining operations or five (5) years before mine closure.	**Not triggered**
4	**Water Management**			
4.1	**Water Supply**			
(a) (b)	<u>General</u> The Applicant shall ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of operations on site to match its available water supply. *Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain any necessary water licences for the development.* <u>Bland Creek Palaeochannel Borefield</u>	• Bore Licence Certificates No. 70BL229248, 70BL229249, 70BL229250, and 70BL229251 (production bores)	Barrick was granted Bore License Certificates under Section 115 of the *Water Act 1912* for water supply from the Bland Creek Palaeochannel in 2003. Water extraction from the Bland Creek Palaeochannel bore-field has not exceeded 15ML/day or 3650 ML extracted in any year. Calendar year 2014 extraction was 976ML.	**Compliant Ongoing**

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	The maximum daily extraction of water from the Bland Creek Palaeochannel Borefield shall not exceed I 5ML/day or 3650Ml/year.			
4.2	**Pipeline & Borefield Infrastructure**			
(a)	All pipeline and borefield infrastructure for the development shall be: (i) constructed in consultation with DP| (Fisheries), and in accordance with the requirements of NOW; (ii) laid in such a way so as not to impede the passage of fish or other animals, or interfere with flood behaviour or the passage of boats and vehicles; and (iii) equipped with an automatic shutdown device so water pumping is immediately stopped in the event of any pipe rupture. The water supply shall not be restarted until the rupture is located and repaired.		(i) The pipeline and borefield infrastructure constructed for the CGM was designed and constructed in accordance with the requirements of DPI (Fisheries and NOW; (ii) The pipelines have been buried in a trench below the lake bed; (iii) Automatic shutdown devices are fitted to the water pipeline from the production bores to the process plant, and were tested prior to commencement of processing. No pipe ruptures had occurred between May 2014 and April 2015.	**Compliant Ongoing**
4.3	**Disposal of Excess Water**			
	There shall be no disposal of water from the internal catchment drainage system on site to Lake Cowal under any circumstances.	• Site Water Management Plan, Feb 2012	The Site Water Management Plan section 4.2.1 describes the lake isolation system for water management on the CGM site. The water management system is constructed to collect all water from the mine operations area and direct it to holding ponds for reuse within the process plant or on site for the mine operations (dust control etc). No release of water to Lake Cowal from the CGM internal catchment system occurred between May 2014 and April 2015.	**Compliant Ongoing**
4.4	**Water Management**			
	The Applicant shall prepare a Water Management Plan for the development to the satisfaction of the Secretary. This plan must: (i) be prepared in consultation with NOW and OEH; (ii) include, but not be limited to, the following matters: • management of the quality and quantity of surface and ground water within and around the mine site, including water in the up catchment diversion system, internal catchment drainage system, dewatering bores, Bland Creek Palaeochannel borefield and water supply pipeline from the borefield, which shall include preparation of monitoring programs (see below); • measures to prevent the quality of water in Lake Cowal or any surface waters being degraded below the relevant ANZECC water quality classification prior to construction due to the construction and/ or	• Letter from DECCW re Site Water Management Plan, 1 July 2010 • Letter from NoW re Site Water Management Plan, 24 Aug 2010 • Site Water Management Plan revision, dated Nov 2010 • Site Water Management Plan revision, dated Jul 2011 • Site Water Management Plan revision, dated Feb 2012 • Letter to DP&I re Addendum to Site Water Management Plan, 17 Feb 2012	The Site Water Management Plan was approved by DoP in 2003. Amendments to the original plan were approved in December 2004 and December 2006. Revisions of the Site Water Management Plan occurred in February 2012, and August 2013 and submitted to DP&I. The Site Water Management Plan prepared to satisfy Development Consent 14/98 MOD 11 was being prepared at the date of this audit (23 April 2015) for submission to DP&E in May 2015. (i) The Site Water Management Plan was prepared in consultation with the DECC/OEH; (ii) The current Site Water Management Plan includes: • Site Water Management Plan section 4 addresses management of the quality and quantity of surface and ground water within and around the mine site;	**Compliant**

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	operation of the mine; • identification of any possible adverse effects on water supply sources of surrounding land holders, and land holders near the Bland Creek Palaeochannel Borefield as a result of the mining operations, and implementation of mitigation measures as necessary; • identification of changes in flood regime on productive agricultural land in Nerang Cowal as a result of the mine perimeter bund intruding into Lake Cowal, and provision of appropriate compensation measures for affected landholders based on inundation of productive land caused by the changed flood regime; • construction and operation of water storages D1 and D4 as first flush systems with initial captured run-off waters from the outer batters of northern and southern emplacement dumps reporting to water storage D6; • measures to manage and dispose of water that may be captured behind the temporary perimeter bund during construction of that bund; • integration of the latest versions of the Jemalong Land and Water Management Plan and the Lake Cowal Land and Water Management Plan; • measures-to evaluate water quality data obtained from monitoring under this consent against records of baseline monitoring undertaken prior to the consent; and • a program for reporting on the effectiveness of the water management systems and performance against objectives contained in the approved site water management plan, and EIS.	• Letter from EPA re Revised Site Water Management Plan, 27 Jan 2012 • Letter from NoW re Site Water Management Plan Revision, 14 Feb 2012 • Letter from NoW re Site Water Management Plan Revision, 6 Jun 2013 • Site Water Management Plan revision, dated Aug 2013 • Surface Water, Groundwater, Meteorological and Biological Monitoring Program – Mining Operation Phase, Mar 2010 • Letter from DoP re Approval of Revised Surface Water, Groundwater, Meteorological and Biological Monitoring Program, Mar 2010	• Site Water Management Plan section 5 addresses measures to prevent the quality of water in Lake Cowal or any surface waters; • Site Water Management Plan section 6 addresses identification of any possible adverse effects on surrounding land holders water supply sources; • Site Water Management Plan section 7 addresses identification of changes in flood regime on productive agricultural land in Nerang Cowal; • Site Water Management Plan section 8 addresses construction and operation of water storages; • Site Water Management Plan section 9 addresses measures to manage and dispose of water captured behind the temporary perimeter bund; • Site Water Management Plan section 10 addresses integration of the Jemalong Land and Water Management Plan and the Lake Cowal Land and Water Management Plan into the Site Water Management Plan; • Site Water Management Plan section 12 addresses measures to evaluate water quality data obtained from monitoring; and • Site Water Management Plan section 12 addresses program for reporting the effectiveness of the water management systems and performance.	
(b)	The Applicant shall develop a strategy for the decommissioning of water management structures, including water storages both in and around the mine site, the water pipeline and borefield infrastructure associated with the development, and long term management of final void and Lake protection bund. The strategy shall include, but not be limited to, long term monitoring of the water quality in the final void and stability of Lake protection bund and void walls, and options for alternate uses of the water pipeline. The strategy for the final void shall be submitted by Year 7 of mining operations or five years before mine closure, whichever is the sooner, in consultation with NOW, OEH, DRE and CEMCC, and to the satisfaction of the Secretary.	• Site Water Management Plan Apr 2013 • Strategy for Decommissioning of CGM Water Management Structures, May 2013	This matter will be addressed in the Mine Closure Plan for the project, when it is developed. A draft strategy for the decommissioning of the CGM water management structures was distributed to the DTIRIS, OoW, EPA, DPI-Fisheries and, CEMCC members. Comments were then collated and submitted to the DP&I on 8 August 2013. The Water Management Strategy is not required until Year 7 of the mining operations or five (5) years before mine closure.	**Not triggered**
(c)	The Applicant shall: (i) construct the Lake protection bund and site water and tailings storages to the requirements of NOW, OEH and	• Site Water Management Plan Apr 2013	A geotechnical report on the pit/void wall construction/ stability was prepared by URS and submitted to DPI in	**Compliant Ongoing**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	DSC; and (ii) provide a geotechnical report on pit/void wall construction/stability to DRE prior to commencement of mining operations and construct pit/void in accordance with the requirements of DRE.	• Lake Protection Bund Operation and Maintenance Manual, Jun 2005 • 2006 Surveillance Report for Lake Protection Bund, URS, 11 Dec 2006 • Rock Amour Suitability Geotechnical Assessment for the Cowal Gold Mine, Geo-Environmental Management, Dec 2008 • Geotechnical Assessment of Bund and Pit Walls, Dr Neil Matte URS, 2010-2013	March 2005. A Lake Protection Bund Operation and Maintenance Manual was produced by URS in June 2005. Remedial maintenance works on the Lake Protection Bund to repair any eroded areas and the stabilisation of the access track have been undertaken and rock armouring of the bund walls occurred to stabilise and reinforce the walls of the bund. Several reports were commissioned by Barrick to investigate the stabilisation, rehabilitation and revegetation of the reactive surface materials on the bunds. The conclusions and recommendations in these reports were assessed and the optimal actions taken for the long term stabilisation of the bunds. A geotechnical assessment of the bund and pit walls is conducted annually by Dr Neil Mattes of URS to assess stability.	
	(i) management of the quality and quantity of surface and ground water within and around the mine site, including water in the up catchment diversion system, internal catchment drainage system, dewatering bores, Bland Creek Paleochannel bore-field and water supply pipeline from the bore-field, which shall include preparation of monitoring programs as provided by condition 8.2.;	• Surface, Groundwater, Meteorological and Biological Monitoring Program, 10 Mar 2010 • Letter from DoP re Approval of the SGMBP, 10 Mar 2010 • Letter to DP&I re Addendum to Surface Water, Groundwater, Meteorological and Biological Monitoring Program, 20 Feb 2012 • Letter from DP&I re Approval of Surface Water, Groundwater, Meteorological and Biological Monitoring Program, 14 Aug 2012	The quality and quantity of surface and groundwater in and around the CGM operations has been monitored for the up-catchment diversion system, internal catchment drainage system, dewatering bores, and Bland Creek Palaeochannel bore-field and water supply pipeline, in accordance with the Surface, Groundwater, Meteorological and Biological Monitoring Program. Results are reported in Appendix B of the AEMR's. The Surface, Groundwater, Meteorological and Biological Monitoring Program was reviewed in 2008 by Professor Fox (as a recommendation of the IMP). The Surface, Groundwater, Meteorological and Biological Monitoring Program was revised and approved by DoP on in July 2011. A further Addendum to the Surface, Groundwater, Meteorological and Biological Monitoring Program was submitted to DP&I on 20 February 2012 to address the groundwater monitoring program for the eastern saline bore-field to maintain consistency with the revised Site Water Management Plan dated 17 February 2012. This revision was approved by DP&I on 14 August 2012.	**Compliant**
	(ii)measures to prevent the quality of water in Lake Cowal or any surface waters being degraded below the relevant ANZECC water quality classification prior to construction due to the construction and/ or operation of the mine;	• Site Water Management Plan Apr 2013 • Surface, Groundwater, Meteorological and Biological Monitoring Program, 10 Mar 2010	Minimal water was present in Lake Cowal prior to April 2010, and no discharge of water from the mine site operational areas had occurred.	**Compliant**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
			Runoff from undisturbed lease areas outside the operational bunds did enter the Lake, south of D4 water storage. Monitoring of the water quality in accordance with the Surface, Groundwater, Meteorological and Biological Monitoring Program has occurred monthly with in-situ monitoring between April 2010 and October 2014 following filling of the Lake. Quarterly water quality monitoring for full parameter suite analysis and sediment monitoring in Lake Cowal was conducted in accordance with the Surface Water, Groundwater, Meteorological and Biological Monitoring Program when the Lake Cowal water level was above 204.5M AHD.	
	(iii) identification of any possible adverse effects on water supply sources of surrounding land holders, and land holders near the Bland Creek Palaeochannel Bore-field as a result of the mining operations, and implementation of mitigation measures as necessary;	• Site Water Management Plan Section 6	Meetings have been held with the agencies and local landowners in relation to water levels and pumping from the Palaeochannel bores. Discussions with the West Trigilana Group have occurred since 2006 in relation to possible effects of the mine on groundwater resource and a short term and medium/Long Term Strategy was agreed with the DNR. Discussions and consultation continues with the agencies and landholders re water usage from the bore-field and implementation of the agreed strategies has occurred for ongoing water management.	**Compliant**
	(iv) identification of changes in flood regime on productive agricultural land in Nerang Cowal as a result of the mine perimeter bund intruding into Lake Cowal, and provision of appropriate compensation measures for affected landholders based on inundation of productive land caused by the changed flood regime	• Site Water Management plan Section 7	As there was no water in Lake Cowal between 2003 and February 2010, no assessment of changes to the flood regime was possible during this period. Rain events in December 2009, February and March 2010 resulted in some shallow water collecting in the lake-bed and this resulted in growth of low vegetation in the 'wet' areas. The perimeter bund had not affected the flood regime or had any impact on the productive agricultural land. Discussions continued between 2010 and 2015 with the land owners, and no requirement for compensation measures had been requested in relation to flood impacts. The perimeter bund has not resulted in any changes to the flood regime that would affect productive land use.	**Compliant**
	(v) construction and operation of water storages D1 and D4 as first flush systems with initial captured run-off waters from the outer batters of northern and southern emplacement dumps reporting to water storage D6;	• Preliminary Earthworks for Mine Development , URS, 23 Apr 2004 • Contained Water Storage Facilities, URS 10 Jun 2004	Construction of the water storages D1 and D4 was completed by January 2005. Surface runoff from the disturbed areas around the waste emplacement dumps is captured in D1 and D4 and the	**Compliant**

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			water collected is recovered for use in the process plant or on site for dust suppression.	
	(vi) measures to manage and dispose of water that may be captured behind the temporary perimeter bund during construction of that bund;	• Site Water Management Plan Section 9	Water collected in the temporary perimeter bund between April 2007 and April 2010 was runoff from the waste emplacements and lake protection bund. No release of water to Lake Cowal occurred from the temporary perimeter bund, with any collected water pumped to D4 for recovery and use in the process plant. The water collected behind the temporary lake protection bund had encouraged vegetative growth within the bunded area and this controlled erosion of the bund walls and floor. The filling of Lake Cowal after 2010 resulted in water being trapped behind the temporary bund and the temporary bund protected the main mine bund from potential erosive action of wind and waves.	**Compliant**
	(vii) integration of the latest versions of the Jemalong Land and Water Management Plan and the Lake Cowal Land and Water Management Plan	• Site Water Management Plan Section 10	The Site Water Management Plan Section 10 considers the requirements of the Jemalong and the Lake Cowal Land and Water Management Plans.	**Compliant**
	(viii) measures to evaluate water quality data obtained from monitoring as required by condition 8.2(a)(iii) against records of baseline monitoring undertaken prior to development consent; and	• Surface, Groundwater, Meteorological and Biological Monitoring Program, Section 4.2 and 5.2 • Groundwater Monitoring Review 2013, Coffey, 26 May 2014	Evaluation of water quality data collected between May 2010 and April 2015 with the EIS baseline data has been conducted for inclusion in the AEMR. Independent assessment of the water quality data was also conducted by Coffey as part of the Part 3A assessment for CGM. In general the water quality has exhibited similar results to the EIS baseline/ background data with pH demonstrating slightly alkaline values (pH 8.6 to 9.3) that were not significantly different to the results collected in 1991/92 for the EIS when the lake last contained water (pH during the 1991-92 period, ranged from 8.27 to 8.67).	**Compliant**
	(ix) a program for reporting on the effectiveness of the water management systems and performance against objectives contained in the approved site water management plan, and EIS.	• Site Water Management Plan Section 12 • Notice of Modification, DoP, 23 Aug 2007 • Surface, Groundwater, Meteorological and Biological Monitoring Report, Appendix B, draft AEMR 2007. • Site Water Management Revised, Nov 2010 • Site Water Management Plan Revised, Feb 2012	The production dewatering bore-field was established external to the perimeter of the open cut pit in 2005. A detailed water budget for the processing phase of the project was developed and the water budget is revised for the process plant operation. An amendment to the use of Jemalong water source was approved by a Notice of Modification granted on 23 August 2006. The CGM water management systems are monitored and assessed annually and reported in the AEMR. Revisions of the Site Water Management Plan occurred in 2010-14 were submitted to the relevant authorities for approval.	**Compliant**

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			Water management has occurred in accordance with the general objectives contained in the EIS and Site Water Management Plan.	
4.5	**Water Monitoring**			
(a)	The Applicant shall construct and locate: (i) surface water monitoring positions in consultation with NOW and OEH, and to the satisfaction of the Secretary, at least three months prior to the commencement of construction works unless otherwise directed by the Secretary; and (ii) groundwater monitoring positions in consultation with NOW and OEH, and to the satisfaction of the Secretary at least six months prior to the commencement of construction works unless otherwise directed by the Secretary.	• Surface Water, Groundwater, Meteorological & Biological Monitoring Program Mar 2010	(a)(i)Surface water monitoring locations were approved by the Director-General in March 2003. (a)(ii)Groundwater monitoring has been conducted in accordance with the EPL conditions P1.3 and M2.1.	**Compliance Ongoing**
(b)	The Applicant shall prepare and implement a detailed monitoring program for the development to the satisfaction of the Secretary. This plan must be prepared in consultation with NOW, OEH, DPI(Fisheries), and be directed towards monitoring the potential water impacts of the mine, including water in the up catchment diversion system, internal catchment drainage system, dewatering bores, all borefields associated with the development, and water supply pipeline, pit/void, Lake Cowal, and any other waters in and around the mine site for all stages of the development. The monitoring program will include the development of adequate chemical and biological monitoring in the waters of Lake Cowal, when water is present, by suitably qualified and experienced staff or consultants to the satisfaction of the NOW and OEH, and in the case of biological monitoring DPI(Fisheries), NOW and OEH must be satisfied as to sampling design, including sample locations, sample frequency, sample handling, transport and analysis, sampling parameters and reporting of analysis results. The results and interpretation of surface and ground water monitoring (including biological monitoring) are to be published on the Applicant's website for the development on a regular basis, or as directed by the Secretary.	• Letter re DoP Approval of Surface Water, Groundwater, Meteorological & Biological Monitoring Program, 10 Mar 2010 • Letter from DPI-NoW re Post-Mine Surface Water, Groundwater, Meteorological and Biological Monitoring Program, 6 Jun 2013 • Letter from DPI-NoW re Post-Mine Surface Water, Groundwater, Meteorological and Biological Monitoring Program, 16 Sep 2013 • Monitoring Data Reports to DECC, DoP and DPI - Jan to Mar, Apr-Jun, Jul-Sep, Oct-Dec 2007 to 2009 • Monthly Cyanide Monitoring Reports to DECC, DoP and DPI (Minerals), May 2013 to Mar 2015	The Surface Water, Groundwater, Meteorological & Biological Monitoring Program dated March 2010. A Surface Water, Groundwater, Meteorological & Biological Monitoring Program to satisfy the monitoring requirements in Development Consent 14/98 MOD 11 condition 4.5 was being prepared at the date of this audit (23 April 2015) for submission to DP&E in May 1015 An independent review of the Surface Water, Groundwater, Meteorological & Biological Monitoring Program as recommended by the Independent Monitoring Panel concluded: *"it provides a robust program of monitoring that will contribute to the assessment of the effectiveness of environmental impact mitigation measures during the operations phase of the Project".* Conformance with the water monitoring program has occurred between May 2013 and April 2015 with water sampling on the mine site and in the Lake Cowal area conducted in accordance with the revised Surface Water, Groundwater, Meteorological and Biological Monitoring Program. The surface and groundwater monitoring results have been provided to the EPA/DECCW/OEH, DoP/DP&I and DII (Fisheries) in accordance with this condition. Reporting of all monitoring results (including cyanide monitoring) also occurs to the relevant authorities in the AEMR and EPA Annual Return.	**Compliant Ongoing**
(c)	The Applicant shall prepare and implement a monitoring program for the detection of any movement of the Lake protection bund, water storage and tailings structures and	• Monitoring Program for the Detection of any Movement of the Lake Protection Bund, Water	The program for the detection of any movement in the lake protection bund, water storage and tailings	**Compliant Ongoing**

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	pit/void walls during the life of the mine, with particular emphasis on monitoring after any seismic events prior to commencement of construction works, in consultation with NOW and DRE, and to the satisfaction of the Secretary. The results and interpretation of surface and ground water monitoring (including biological monitoring) are to be published on the Applicant's website for the development on a regular basis, or as directed by the Secretary.	Storage and Tailings Structures and Pit/Void Walls, Dec 2009 to 2014	structures and pit/void walls was approved by the Director-General on 9 October 2003. Monitoring points in the Lake Protection Bund (located each 200m on top of the banks) were installed in accordance with the program. No significant movement has been recorded at any of the monument survey points.	
4.6	**Catchment Areas and Watercourses**			
	The Applicant shall as a landowner have on-going regard for the provisions of the latest versions of the Jemalong Land and Water Management Plan, Lake Cowal Land and Water Management Plan, Mid-Lachlan Regional Vegetation Management Plan, and any future catchment/land and water management plans that may become relevant to the area.	• Site Water Management Plan, Apr 2013	The provisions in the Jemalong Land and Water Management Plan, Lake Cowal Land and Water Management Plan, and Mid-Lachlan Regional Vegetation Management Plan were considered and have been included where relevant in the Site Water Management Plan and its revisions.	**Compliant**
5	**HAZARDOUS MATERIALS AND TAILINGS MANAGEMENT**			
5.1	**Waste Rock Emplacement and Management**			
	The Applicant shall construct and manage the waste rock emplacement as set out in the EIS, and to the satisfaction of DRE.	• Mining Operations Plan Jan 2011 to Sep 2012, • Variation to MOP Jan 2011 to Sep 2012	The waste rock emplacements are being established in accordance with the MOP.	**Compliant**
5.2	**Tailings Emplacement and Management**			
	The Applicant shall: (a) construct the tailings dams to the requirements of, DRE, OEH, EPA and DSC and in consultation with NOW; (b) construct and compact the floor of the tailings storages as required to a permeability acceptable to the DRE, OEH and EPA in consultation with NOW;	• Letter to DEC re Permeability Test Report for STSF, Dec 2005 • Letter from Dam Safety Committee re STSF Stage 2 Construction, 9 Jan 2009 • NTSF Surveillance Report 2013, URS, 18 Dec 2013 • STSF Surveillance Report, URS, 18 Mar 2014	(a) The NTSF and STSF were constructed in accordance with the requirements of the DECC (EPA) /DSC and DPI (Minerals). The STSF initially received tailings between March 2006 and April 2007. Tailings disposal then occurred to the NTSF while construction of the first lift of the STSF walls was occurring during 2008. The Dam Safety Committee provided a response to the Construction Report in January 2009 advising that the review of the NTSF and STSF satisfies the Committee's requirements. (b) Permeability Test Reports were submitted to DEC and DPI and DIPNR (LWC).	**Compliant**
5.3	***Cyanide Management***			
(a)	**Cyanide levels** The Applicant shall ensure that cyanide levels of the aqueous component of the tailings slurry stream do not exceed: 20mg CN_{WAD}/L (90 percentile over six months), and 30mg CN_{WAD}/L	• Letters and Data to DoP/DII-Minerals/DECC re Monthly Cyanide Monitoring, April 2007 to Mar 2010	The cyanide levels in the slurry stream have not exceeded <20mg CN_{WAD}/L (90 percentile) or 30mg CN_{WAD}/L (maximum permissible limit) between May 2013 and April 2015.	**Compliant**

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	(maximum permissible limit at any time), at the discharge point to the tailings storages.	• Letters to DII/DoP/DECCW re Monthly Cyanide Monitoring Results, April 2014 to March 2015	CN_{WAD} levels at the CGM STSF and NTSF have been forwarded to DP&I/DI&I-Minerals/OEH and the CEMCC quarterly between May 2010 and April 2013.	
(b)	**Cyanide management** The Applicant shall prepare a cyanide management plan for the monitoring and reporting of cyanide use on the site, in consultation with DII(Minerals), DECCW, and NoW, and to the satisfaction of the Director-General , prior to any use of cyanide on the site. The plan shall make provision for, but is not limited to: (i) containing cyanide contaminated waters entirely within the mine site; (ii) maintaining weak acid dissociable (WAD) cyanide levels at the discharge point to the tailings dams to the levels stated in condition 5.3(a); (iii) contingency measures for cyanide reduction.	• Cyanide Management Plan, Jan 2006 • Letter from DECC re Addendum to Cyanide Management Plan, 24 Aug 2007 • Letter from DoP re Amendments to Cyanide Management Plan, 24 Mar 2010 • Letter from DECCW re Proposed Change to Cyanide Monitoring Point, 11 Jun 2010 • Letter from NoW re Addendum to Cyanide Management Plan, 23 Aug 2010 • Letter from DoP re Proposed Amendments to Cyanide Management Plan, 20 Dec 2010	The Cyanide Management Plan prepared in accordance with Development Consent 14/98 condition 5.3(b) was approved by the Director-General of DoP on 9 January 2006. Amendments to the Cyanide Management Plan monitoring program in relation to the analysis method (i.e. use of the picric acid analysis procedure) was agreed with the DPI in December 2006, and DECC in January 2007. Amendments to the Cyanide Management Plan were also accepted by DWE on 21 July 2008, approved by DoP on 30 October 2008 and accepted by DECC on 9 October 2009. Further amendments to the Cyanide Management Plan were approved by DoP on 24 March 2010. A change to the cyanide monitoring point was accepted by the DECCW on 11 June 2010 and approved by DoP on 20 December 2010. The cyanide levels in the slurry stream have not exceeded 20mg CN_{WAD}/L (90 percentile) or 30mg CN_{WAD}/L (maximum permissible limit) between May 2013 and April 2015.	**Compliant**
(c)	**Wildlife Deaths** In the event of wildlife deaths occurring due to cyanide, review of cyanide levels shall occur by the OEH and EPA in consultation with the Applicant and DRE. Any decision to require cyanide reduction shall include, but not be limited to, consideration of the number of fauna deaths, the species involved, antecedent condition of species, methods employed at the time to prevent use of tailings dams by fauna, and antecedent climatic and surface water conditions of the Lake and surrounding area. The Applicant shall notify the CEMCC of any reductions in cyanide levels as soon as practicable.	• Letter from DECC re Fauna Reporting Protocol, Feb 2009 • Environmental Incident Register, Jan 2014 to Apr 2015 • Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Donato Environmental Services: ○ Oct 2013 to Mar 2014 ○ Jul 2014 to Dec 2014	Barrick environmental and processing personnel have attended avifauna training workshops presented by Donato Environmental Services on Wildlife Monitoring and the International Cyanide Management Code. The training module provided procedures, reporting requirements, observation records and species list/reference images. No wildlife deaths attributable to the tailings storage facilities occurred between May 2014 and April 2015:	**Compliant**
(d)	**Cyanide Monitoring**	•		
	The Applicant shall prepare and implement a cyanide monitoring program for the development to the satisfaction of the Secretary. The plan must be prepared in consultation with OEH and DRE, and shall include, but not be limited to, provision for:	• Cyanide Management Plan, section 6.2 • Process Plant Cyanide Monitoring Data, Barrick Cyanide Management Plan, section 6.2	(i) The cyanide monitoring program was approved as part of the Cyanide Management Plan (Development Consent 14/98 5.3(b) by DoP on 9 January 2006.	**Compliant Ongoing**

<table>
<tr><th>No.</th><th>DA 14/98 Minister's Condition of Approval</th><th>Verification</th><th>Comments</th><th>Compliance</th></tr>
<tr><td></td><td>(i) monitoring of CN_{WAD} levels of the aqueous component of the tailings slurry stream at the discharge point to tailings dams twice daily or as otherwise directed by the Secretary, with any increases above 20mg CN_{WAD}/L to be assessed daily to ensure compliance and reported monthly to the DRE and OEH, unless otherwise agreed by the Secretary. If the CN_{WAD} levels of 30mg/L are exceeded in the liquid at any time, discharge to the tailings dams shall cease until CN_{WAD} levels can be achieved below the levels stated in condition 5.3(a) and such exceedance shall be reported to the OEH within 24 hours;
(ii) (ii) monitoring CN_{WAD} levels in the decant water of the tailings dams twice daily or as otherwise directed by the Secretary;
(iii) an on-site laboratory for quickly establishing CN_{WAD} levels in the liquid at the discharge point to tailings dams and in the decant ponds for monitoring purposes;
(iv) on-line monitoring of $CN_{(FREE)}$ at locations where employees are operating;
(v) establishing a monitoring regime for detection of cyanide movement beneath and adjacent to the tailings impoundments.
A summary of the cyanide monitoring results shall be provided on the Applicant's website for the development on a regular basis, or as directed by the Secretary</td><td>• Cyanide Monitoring Results, Monthly Reports, April 2011 to March 2015
• 2009 AEMR 19 Apr 2010
• Letters to DoP, DECCW, DII re Monthly Cyanide Monitoring Results, May 2011 to April 2015</td><td>(ii) Monitoring of the decant water quality and tailing discharge occurs twice daily with the samples analysed at the on-site laboratory.

All cyanide results were >20mg CN_{WAD}/L between May 2013 and Apr 2015

<table><tr><th>Period</th><th>>20mg CN_{WAD}/L</th><th>>30mg CN_{WAD}/L</th></tr><tr><td>Jan- Mar 2014</td><td>0</td><td>0</td></tr><tr><td>Mar-Jun 2014</td><td>0</td><td>0</td></tr><tr><td>Jun-Sep2014</td><td>0</td><td>0</td></tr><tr><td>Sep–Dec 2014</td><td>0</td><td>0</td></tr><tr><td>Jan-Mar 2015</td><td>0</td><td>0</td></tr><tr><td>Mar-Apr 2015</td><td>0</td><td>0</td></tr></table>
(iii) on site analysis for CN_{WAD} levels is conducted on the liquid at the discharge point to tailings dams and in the decant ponds;
(iv) Free cyanide monitoring within the process plant area is conducted as part of the daily workplace monitoring program (refer to section 6.3 of the Cyanide Management Plan).
(v) Cyanide Management Plan section 6.4 describes the quarterly groundwater monitoring program designed to detect cyanide movement beneath and adjacent to the tailings storage facilities. No cyanide has been detected in the groundwater monitoring bores between May 2013 and May 2014.
The reporting of the cyanide monitoring results occurs on a monthly basis to the DII (Minerals)/DTIRIS-DRE, DECCW/ OEH and DP&I. (Cyanide monitoring started in May 2006 following commencement of use of cyanide in the process plant). All results have demonstrated compliance with the criteria. (Note: If any results were detected in excess of 20mg CN_{WAD}/L they would be reported immediately to the DRE and OEH).</td><td></td></tr>
<tr><td>5.4</td><td>Hazards Management</td><td></td><td></td><td></td></tr>
<tr><td>(a)</td><td>Pre-Construction Studies</td><td></td><td></td><td></td></tr>
<tr><td></td><td>The Applicant shall prepare and submit for the approval of the Secretary, the studies set out under subsections 5.4(a(i) to 5.4(a)(iii) (the pre-construction studies), at least one month prior to the commencement of construction of</td><td></td><td>Construction related to Development Consent 14/98 MOD 11 had not commenced at the date of this audit (23 April 2015).</td><td>Not triggered</td></tr>
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No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	the proposed development, (except for construction of those preliminary works that are outside the scope of the hazard studies), or within such further period as Secretary may agree. Construction, other than of preliminary works, shall not commence until approval has been given by the Secretary and, with respect to the fire safety study, approval has also been given by the Commissioner of the NSW Fire Brigades.			
	(i) Fire Safety Study This study shall cover all aspects detailed in the Department's Hazardous Industry Planning Advisory Paper No. 2, "Fire Safety Study Guidelines" and the New South Wales Government's "Best Practice Guidelines for Contaminated Water Retention and Treatment Systems". The study shall also be submitted for approval to the New South Wales Fire Brigades. The study should, in particular, address the fire related issues associated with the storage and use of Ammonium Nitrate, Sodium Isobutyl xanthate, and Cyanide.	• Letter to NSW Fire Brigades – Submission of Fire Safety Study for approval, 22 Dec 2004 • Letter to DIPNR – Submission of Fire Safety Study, 22 Dec 2004 • Letter from NSW Fire Brigades re Satisfaction with the Fire Safety Study, 15 September 2005	Fire Safety Study prepared by Pinnacle Risk Management for CGM was submitted to the Commissioner of the NSW Fire Brigade for approval and then submitted to DIPNR in December 2004 in accordance with Development Consent 14/98 condition 5.4. The NSW Fire Brigades provided a letter expressing satisfaction with the fire safety measures within the study in September 2005. The Final Hazard Analysis was approved by DIPNR in March 2005 and a Fire Hazard Audit of the CGM site and facilities was carried out in November 2008. Construction related to Development Consent 14/98 MOD 11 had not commenced at the date of this audit (23 April 2015).	**Compliant** **Not triggered**
	(ii) Hazard and Operability Study The study is to be chaired by an independent qualified person approved by the Director-General prior to the commencement of the study. The study shall be carried out in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 8, "HAZOP Guidelines". The HAZOP shall in particular address the monitoring, control, alarm and shutdown systems associated with xanthate and cyanide process streams.	• Letter to DIPNR – Submission of HAZOP Study, 22 Dec 2004 • Letter from DoP re HAZOP Supplementary Studies, Sep 2005 • Letter from Barrick to DoP re HAZOP Study Action Closeout Status, 16 Jan 2006HAZOP Supplementary Studies	The Hazard and Operability Study for the main plant area was prepared and submitted to DIPNR in Dec 2004 and the HAZOP Study Action Item Closeout Status Report (Action Program) prepared by Aker Kvaerner Australia Pty Ltd, was submitted in Dec 2004. Supplementary HAZOP Studies for the oxygen system, LPG system and cyanide leach package were notified to be to the satisfaction of the Director-General in Jan 2006. Construction related to Development Consent 14/98 MOD 11 had not commenced at the date of this audit (23 April 2015).	**Compliant** **Not triggered**
	(iii) Final Hazard Analysis The analysis should be prepared in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 6, "Guidelines for Hazard Analysis".	• Final Hazard Analysis, 2004 • Letter to DIPNR – Submission of Final Hazard Analysis, 22 Dec 2004 • Letter from DIPNR re Fire Hazard Analysis, 30 Mar 2005	The Final Hazard Analysis was prepared by CGM and submitted to DIPNR on 22 December 2004. The Final Hazard Analysis was approved by DIPNR in March 2005. Construction related to Development Consent 14/98 MOD 11 had not commenced at the date of this audit (23 April 2015).	**Compliant** **Not triggered**
	(b) <u>Pre-Commissioning Studies</u>			

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	The Applicant shall prepare and submit for the approval of the Director-General the studies set out under subsections 5.4(b)(i) to 5.4(b)(iii) (the pre-commissioning studies), no later than two months prior to the commencement of commissioning of the proposed development, or within such period as the Director-General may agree. Commissioning shall not commence until approval has been given by the Director-General.	See references below	The pre-commissioning studies were conducted and reports prepared and submitted to the Director-General. Approval of the studies and plans by the D-G was obtained prior to commencement of the plant commissioning. Any pre-commissioning studies required under MOD 11 will be undertaken prior to plant commencement of operations.	**Compliant**
	(i) *Transport of Hazardous Materials* The study comprises arrangements covering the transport of hazardous materials including details of routes to be used for the movement of vehicles carrying hazardous materials to or from the proposed development. The study shall be carried out in accordance with the Department's draft "Route Selection" guidelines. Suitable routes identified in the study shall be used except where departures are necessary for local deliveries or emergencies. The study should also address: (1) the issues associated with spills, clean-up procedures, training of clean-up teams, communication, and liaison with organisations such as the fire brigades, District Emergency Management Coordinator (and Committee), Local Emergency Management Committee(s), and state emergency services; (2) inspection and monitoring procedures for chemicals such as explosives, xanthates and cyanides prior to commencement of a trip, to verify the integrity of the packaging; and (3) measures to be taken to ensure that the temperature of the materials does not rise above safe levels..	• Transport of Hazardous Material Study, 2006 • Letter from DoP re Approval of Transport of Hazardous Materials Plan, 9 Jan 2006 • Letter from DoP re Approval for Transport of Flotation Chemicals, 28 Feb 2007 • Letter re Interim Approval from DoP re Transport of SIBX, 20 Sep 2007 • Letter from DoP re Addendum to Transport of Hazardous Materials Study, 13 Oct 2010 • Letter from DoP re Addendum to Transport of Hazardous Materials Study, 1 Dec 2010 • Letter from DP&I re Notification of Change to Transport of Hazardous Chemicals (Ammonium Nitrate), 13 Jan 2012 • Emails to DP&I re Emergency Routing of Sodium Cyanide to CGM due to Road Conditions, Mar 2012	Route evaluation for hazardous materials studies conducted and consultation with the affected Councils occurred in accordance with Guideline No.9. The Transport of Hazardous Materials Study was approved by the D-G on 9 January 2006 and transport of flotation chemicals was approved by DoP in February 2007. A temporary amendment to the Transport of Hazardous Materials Study to allow the substitution of SiBX for PAX (due to an unexpected short supply of PAX) was approved by DoP on 20 September 2007. An amendment of the Transport of Hazardous Materials Study in relation to an alternative storage transfer location at Botany Bay commenced, and consultation with the relevant Council(s) and government departments occurred in 2009. An amendment to the route for the transport of hydrogen peroxide from the Solvay Interox Banksmeadow facility to CGM was proposed and accepted by DoP on 13 October 2010. Approval for a variation to the transport route for hydrogen peroxide from the Queensland border to Dubbo (via Goondiwindi) was granted by DoP on 1 December 2010. Approval for a change to the transport route for Ammonium Nitrate by road from Maxam Australia Depot Goulburn to CGM endorsed by DP&I on 13 January 2012. Emergency route change permission was sought and granted by DP&I in November 2011, and in January and March 2012 due to road conditions following heavy rainfall events.	**Compliant Ongoing**
	(ii) *Emergency Plan* A comprehensive emergency plan and detailed emergency procedures for the proposed development. This plan shall	• Letter from DoP re Approval of the Operations Emergency Management Plan, 14 Dec 2005	The Operations Emergency Plan was approved by DoP on 14 December 2005.	**Compliant**

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	include detailed procedures for the safety of all people outside of the development who may be at risk from the development. The plan should be in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 1, "Industry Emergency Planning Guidelines", and include procedures for spillage, cleanup, control and protection, and rescue of wildlife during the emergency.	• Emergency Response Plan Cowal Gold Project, Mar 2007 • Letter from DoP re updated Emergency Plan, 18 Jun 2008 • Emergency Response Plan, 4 Oct 2013 • Letter to DP&I re Emergency Response Plan Revision, 4 Oct 2013	A comprehensive review of the Emergency Response Plan was undertaken in February 2007 and the revised plan was submitted to DoP on 23 March 2007. The CGM Emergency Plan was revised and updated in April 2008 and DoP approved the updated plan on 18 June 2008. No revisions of the Emergency Response Plan occurred during May 2014 and Apr 2015.	
	(iii) Safety Management System A document setting out a comprehensive safety management system, covering all operations on-site and associated transport activities involving hazardous materials. The document shall clearly specify all safety related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to procedures. Records shall be kept on-site and should be available for inspection by the Director-General upon request. The safety management system should be developed in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 9, "Safety Management".	• Safety Management System Oct 2005 • Letter from DoP re Approval of the Safety Management System, 14 Dec 2005 • Revised Safety Management System Feb 2007 • Letter from DoP re Revised Safety Management System, 18 Jun 2009	The Safety Management System for CGM was approved by DoP on 14 December 2005 and a major review of the Safety Management System was conducted by Barrick in February 2007 and submitted to DoP. The Safety Management System was updated and DoP approved the updated plan on 18 June 2009. No further updates to the Safety Management System occurred between May 2013 and May 2014.	**Compliant**
(c)	Hazard Audit Twelve months after the commencement of operations of the proposed development or within such further period as the Secretary may agree, the Applicant shall carry out a comprehensive hazard audit of the proposed development and submit a report of the audit to the Secretary. The audit shall be carried out at the Applicant's expense by a duly qualified independent person or team approved by the Secretary prior to commencement of the audit. Further audits shall be carried out every three years or as determined by the Secretary and a report of each audit shall within a month of the audit be submitted to the Secretary. Hazard audits should be carried out in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 5,"Hazard Audit Guidelines".	• Pre-Operation Compliance Report, Feb 2006 • Hazard Audit Report, Cowal Gold Project, Pinnacle Risk Management Pty Ltd, 6 Jun 2007 • Letter from DoP re Approval of the 2010 Hazard Audit Report, 15 Feb 2011 • Hazard Audit Report Cowal Gold Project, Pinnacle Risk Management Pty Ltd, 11 Apr 2013	A Hazard Audit was conducted by Dean Shewring of Pinnacle Risk Management Pty Ltd, 12 months after commencement of operation of process plant (i.e. April 2007). The Hazard Audit was accepted by DoP on 6 August 2007. The second Hazard Audit of the CGM operations was conducted on 19-22 April 2010. The third Hazard Audit Report of the CGM operations was conducted on 11 April 2013.	**Compliant**
5.5	***Domestic Waste***			
	The Applicant shall dispose of all solid waste and putrescible matter from the site to the satisfaction of BSC.		All solid waste and putrescible matter from the site activities is collected by JJ Richards waste contractor, for disposal at an approved landfill.	**Compliant**
5.6	***Sewage and Associated Waste Management***			

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	The Applicant shall install the site sewage treatment facility, and dispose of treated sewage and sullage to the satisfaction of BSC and DECCW, and in accordance with the requirements of the Department of Health.	• Construction Certificate No.6, 4 Apr 2005 for Package Sewage Treatment Plant, DIPNR	The permanent on-site sewage management system was installed west of the Mine Workshop and Administration Complex in the 1st quarter 2006 in accordance with the requirements of the Department of Health, BSC and DECCW.	**Compliant**
			 **CGM Package Sewage Treatment Plant**	
5.7	***Asbestos and Other Hazardous or Toxic Waste Management***			
	The Applicant shall prior to commencement of construction works prepare a Hazardous Waste and Chemical Management Plan as set out in section 6.4.1 of the EIS in consultation with DECCW and BSC, and to the satisfaction of the Secretary.	• Letter from DECCW re Hazardous Waste and Chemical Management Plan, 23 Feb 2011 • Letter from DP&I re Update to Hazardous Waste and Chemical Management Plan, 13 May 2011 • Letter from BSC re Update to Hazardous Waste and Chemical Management Plan, 19 Apr 2011	The Hazardous Waste and Chemical Management Plan approved by the Director General in October 2003, was revised by Barrick and the changes were accepted by DECC/DECCW in December 2007, and April and December 2009. Amendments to the Hazardous Waste and Chemical Management Plan were approved by DoP on 10 March 2010. BSC accepted the revised Hazardous Waste and Chemical Management Plan on 19 April 2011 and DP&I approved the revised document on 13 May 2011.	**Compliant**
6	**AIR QUALITY, BLAST, NOISE AND LIGHT MANAGEMENT**			
6.1	**Air Management**			
(a)	**Impact Assessment Criteria**			
	The Applicant shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria listed in Tables 3, 4 and 5 at any residence on privately-owned land. *Table 3: Long term impact assessment criteria for particulate matter*	• Interpretation and Discussion of Air Quality Monitoring Results, CGM, Prof. Stephen Cattle Uni of Sydney, 2012 • Interpretation and Discussion of Air Quality Monitoring Results, CGM, Prof. Stephen Cattle Uni of Sydney, 2013	Dust management from the CGM operations continues to control emissions from the site in accordance with the Dust Management Plan to within the criteria specified in Development Consent 14/98 6.1(c). Monitoring of dust deposition and PM_{10} as outlined in the Dust Management Plan and the Surface Water, Groundwater, Meteorological and Biological Monitoring	**Compliant Ongoing**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	Pollutant / **Averaging Period** / **Criterion** Total suspended particulate (TSP) matter / Annual / 90 µg/m^3 Particulate matter <10µm (PM_{10}) / Annual / 30 µg/m^3 *Table 4: Short term impact assessment criterion for particulate matter* **Pollutant** / **24 hour** / **Criterion** Particulate matter <10µm (PM_{10}) / 24 hour / 50 µg/m^3 *Table 5: Long term impact assessment criteria for deposited dust* **Pollutant** / **Averaging Period** / **Max increase in deposited dust level** / **Max total deposited dust level** Deposited dust / Annual / 2g/m^2/mth / 4g/m^2/mth	• Interpretation and Discussion of Air Quality Monitoring Results, CGM, Prof. Stephen Cattle Uni of Sydney 2014 • Dust Management Plan Feb 2009 • 2013 AEMR • 2014 Annual Return (draft)	Program continues with review of the data annually by Dr Stephen Cattle, University of Sydney and reported in the AEMR. The dust monitoring results have generally been compliant with the criteria in Development Consent 14/98 6.1(d). The eight dust gauges external to the mine lease area have exhibited significant proportion of contamination from insects, bird droppings and vegetative matter that if removed from the total deposition data demonstrate annual average dust deposition results that are less than the assessment criterion of 4g/m^2/mth. The HVAS located north of the mine lease area demonstrated TSP levels below the criterion in Table 2 (i.e. less than 90µg/m^3) between May 2014 and April 2015.	
	Operating Conditions The Applicant shall: (i) implement best management practice to minimise the off-site odour, fume, spontaneous combustion and dust emissions of the development; (ii) implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site; (iii) minimise any visible off-site air pollution generated by the development; (iv) minimise the surface disturbance on the site; (v) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see note (d) above under Tables 3-5); and (vi) carry out regular monitoring to determine whether there is compliance with the relevant conditions of this consent, to the satisfaction of the Secretary.	• Dust Management Plan Feb 2009 • 2012 AEMR • 2013 AEMR • 2014 Annual Review (draft) • Interpretation and Discussion of Air Quality Monitoring Results, Uni of Sydney, Dr Stephen Cattle, 2012, 2013 and 2014	Air quality management at the CGM operations controls emissions from the site to within the criteria specified in Development Consent 14/98 6.1(c). The area of the site disturbed is restricted to the area required for the active mining activities. Monitoring of dust deposition and PM_{10} as outlined in the Dust Management Plan and the Surface Water, Groundwater, Meteorological and Biological Monitoring Program continues with review of the data annually by Dr Stephen Cattle, University of Sydney and reported in the AEMR. The dust monitoring results have generally been compliant with the criteria in Development Consent 14/98 6.1(d).	**Compliant Ongoing**
(c)	**Air Quality Management Plan** The Applicant shall prepare and implement an Air Quality Management Plan for the development to the satisfaction of the Secretary. This plan must:	• Dust Management Plan Feb 2009 • 2010 AEMR, Aug 2011 • 2011 AEMR, Jul 2012 • 2012 AEMR, Apr 2013	A Dust Management Plan was approved by the Director-General in August 2003. Amendments to the Dust Management Plan were approved by DoP in August 2007 and February 2009.	**Compliant Ongoing**

<table>
<tr><th>No.</th><th>DA 14/98 Minister's Condition of Approval</th><th>Verification</th><th>Comments</th><th>Compliance</th></tr>
<tr><td></td><td>(i) be prepared in consultation with the EPA;
(ii) describe the measures that would be implemented to ensure compliance with the relevant air quality criteria and operating conditions of this approval:
(iii) include an air quality monitoring program that:
• evaluates and reports on the:
- the effectiveness of the air quality management system;
- compliance with the air quality criteria;
- compliance with the air quality operating conditions; and
• defines what constitutes an air quality incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents</td><td>• 2013 AEMR, May 2014
• Interpretation and Discussion of Air Quality Monitoring Results, Uni of Sydney, Dr Stephen Cattle, 2012, 2013 and 2014
• Revised Air Quality Management Plan, 2015
• Letter to EPA re Revised Air Quality Management Plan, 20 Feb 2015
• Letter from EPA re Comments on Air Quality Management Plan, 6 Mar 2015
• Letter to EPA re Revised Air Quality Management Plan, 10 Apr 2015
• Letter to DP&E re Air Quality Management Plan, 20 Apr 2015</td><td>[An Air Quality Management Plan to satisfy Development Consent 14/98 conition6.1(c) was prepared and submitted to DP&E on 20 April 2015.]
(i)Dust deposition gauges were installed at the locations identified in the Dust Management Plan.
A high volume air sampler operates at the nearest residences (sensitive receptor) and operates on a 6 day cycle for TSP.
Baseline monitoring of dust has continued with the dust deposition gauges maintained and samples collected each month. Dust monitoring has continued at the sites specified in EPL condition P1.1.
(ii)Dust deposition and TSP monitoring related to Lake Cowal water quality was not activated from 2007 to 2010 as there was no water in the lake.
Dust monitoring around the CGM area is reported in the AEMR. Dust deposition monitoring at six sites and PM_{10} monitoring at the locations specified in the EPL condition P1.1, has continued.
The dust monitoring results are reviewed annually by Dr Stephen Cattle, University of Sydney and results are presented in the AEMR and reported to Barrick.
(iii)The dust monitoring results, independently reviewed annually by Dr Stephen Cattle, University of Sydney, are presented in the AEMR 3.1.3.1.</td><td></td></tr>
<tr><td>6.2</td><td>Meteorological Monitoring</td><td></td><td></td><td></td></tr>
<tr><td></td><td>For the life of the development, the Applicant shall ensure that there is a meteorological station in the vicinity of the site that complies with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline.</td><td>• Cowal Calibration Report, Sentinel Pty Ltd, Jul, Sep, Dec 2013 and Mar 2014
• Monthly Weather Station Reports – January 2013 to March 2014, Sentinel Pty Ltd</td><td>The permanent meteorological station installed on the southern side of the mine lease in June 2004 continues to operate provides continuous monitoring results for use by the site operators.
The meteorological station is checked and calibrated quarterly by Sentinel Pty Ltd and a monthly summary report of the meteorological data is provided to CGM.</td><td>Compliant Ongoing</td></tr>
<tr><td>6.3</td><td>Blast Management</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Impact Assessment Criteria</td><td></td><td></td><td></td></tr>
<tr><td>6.3</td><td>(a) The Applicant shall ensure that blasting at the project does not exceed the criteria in Table 6.
Table 6: Blasting impact assessment criteria
<table>
<tr><th>Location</th><th>Time of Blasting</th><th>Air-blast over pressure dBL</th><th>Ground mm/s</th><th>Allowable exceedance</th></tr>
<tr><td></td><td>Any time</td><td>120</td><td>10</td><td>0%</td></tr>
</table></td><td>• Blast Monthly Reports – January, February and March 2014
• Review of Blast Monitoring Report 2013, The Saros Group, Mar 2014
• Review of Blast Monitoring Report 2012, The Saros Group, Mar 2013</td><td>Blast monitoring conducted at the fixed monitor locations around the CGM site has demonstrated compliance with the overpressure and vibration Day and Evening criteria in Development Consent 14/98 6.3(a).
No blast overpressure results exceeded 120dBL, and overpressure results greater than 115dBL accounting for less than 5% of the total blasts.</td><td>Compliant</td></tr>
</table>

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	Residence on privately owned land — Monday to Saturday during day: 115 dB(L), 5; Monday to Saturday during evening: 105 dB(L), 2; Monday to Saturday at night: 95 dB(L), 1; Sundays& Public Holidays: 95 dB(L), 1 — 5% of total number of blasts over a period of 12 months However, these criteria do not apply if the Applicant has a written agreement with the relevant owner to exceed the limits in Table 6, and the Applicant has advised the Department in writing of the terms of this agreement.	• Review of Blast Monitoring Results 2014, The Saros Group, 6 Mar 2015	No night time blasts have occurred between May 2013 and May 2014. Exceedance of the 95dB(L) criteria (Development Consent 14/98 6.3(a)) occurred from five (5) blasts on Sundays and Public Holidays between May 2013 and May 2014. Out of a total of 382 blasts: • No blast related events exceeded the maximum compliance level of 120dB(L); • No blast related events exceeded the 115dB(L) level on normal weekdays and Saturdays; • Ten blast related events exceeded the 95dB(L) level on Sundays and Public Holidays; and • The number of exceedances was not more than the 5% of the total number of blasts. Cowal Gold Mine achieved compliance in relation to the specified air overpressure levels for the period 23rd December 2013 until the 22nd March 2015.	
	Blast Frequency			
(b)	The Applicant may carry out a maximum of 1 blast a day on site. This condition does not apply to blasts required to ensure the safety of the mine or its workers. *Note: For the purposes of this condition a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.*	• Revised Blast Management Plan 2015 • Review of Blast Monitoring Results 2014, The Saros Group, 6 Mar 2015	A maximum of 1 blast event per day occurs on the CGM site. Occasional blast events occur if required to ensure the safety of the mine or its workers	**Ongoing**
(c)	**Property Investigations** If the owner of any privately-owned land claims that buildings and/or structures on his/her land have been damaged as a result of blasting on the site, and the Secretary agrees an independent investigation of the claim is warranted, then within 2 months of receiving this claim the Applicant shall: (¡) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and (ii) give the landowner a copy of the property investigation report. If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant shall repair the damage to the satisfaction of the Secretary. If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the			**Noted**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.			
(d)	**Operating Conditions** The Applicant shall: (i) implement best management practice to: • protect the safety of people and livestock in the areas surrounding blasting operations; • protect public or private infrastructure/property in the surrounding area from damage from blasting operations; and • minimise the dust and fume emissions of any blasting; (ii) operate a suitable system to enable the public to get up-to-date information on the proposed blasting schedule on site; and (iii) carry out regular monitoring to determine whether the development is complying with the relevant conditions of this approval, to the satisfaction of the Secretary.	• Revised Blast Management Plan 2015 • Letter to DP&E re Blast Management Plan, 9 Feb 2015 • Letter from EPA re revised Blast Management Plan, 4 Feb 2015	(i)The blasting practices outlined in the Blast Management Plan are consistent with best management practice. (ii)Notification of the blasting schedule at the Cowal Gold Mine is provided to potentially affected residents. (iii)All blasts are monitored for overpressure and ground vibration and the data reviewed to assess compliance.	**Compliant**
(e)	**Blast Management Plan** The Applicant shall prepare and implement a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must: (i) be prepared in consultation with the EPA; (ii) describe the measures that would be implemented to ensure compliance with the blast criteria and operating conditions of this approval; and (iii) include a monitoring program for evaluating and reporting on compliance with the blasting criteria and operating conditions of this approval	• Revised Blast Management Plan 2015 • Letter to DP&E re Blast Management Plan, 9 Feb 2015 • Letter from EPA re revised Blast Management Plan, 4 Feb 2015	The Blast Management Plan was revised to satisfy Development Consent condition 6.3(e) dated 22 July 2013. The revised Blast Management Plan was submitted to the relevant authorities on January 2015 and was accepted by EPA on 4 February 2015.	**Compliant**
6.4	**Noise Management**			
(a)	**Acquisition Upon Request** Upon receiving a written request for acquisition from the owner of any land listed in Table 7 following landholder notification in accordance with condition 11.1 of schedule 2, the Applicant shall acquire the land in accordance with the procedures in condition 11 of schedule 2. *Table 7: Land subject to acquisition upon request* Coniston McLintock		This condition had not been activated at the date of this audit. There had been no exceedance of the criteria. No requests for acquisition have been received by CGM up to April 2013.	**Not activated**

<table>
<tr><th>No.</th><th>DA 14/98 Minister's Condition of Approval</th><th>Verification</th><th>Comments</th><th>Compliance</th></tr>
<tr><td></td><td>West Lea.
Note: To interpret the location referred to Table 7, see the map in Appendix 6.</td><td></td><td></td><td></td></tr>
<tr><td>(b)</td><td><u>Additional Noise Mitigation</u>
Upon receiving a written request from the owner of the residences listed in Table 7, the Applicant shall implement additional noise mitigation measures (such as double-glazing, insulation, and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible, and directed towards reducing the noise impacts of the development on the residence.
If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.</td><td>• Communication with DP&I (Executive Director Sam Haddad) and Shane Goodwin Barrick
• COW.400.05.2885SG, 5 Sept 2012</td><td>No written requests to activate this condition have been received by Barrick.

Barrick entered into Agreements with residents affected by traffic noise in September 2012 and notified DP&I of the terms of agreement on 3 September 2012 (see comments in 6.4(d) above).</td><td>Noted</td></tr>
<tr><td>(c)</td><td><u>Impact Assessment Criteria</u>
The Applicant shall ensure that the noise generated by the development does not exceed the noise impact assessment criteria in Table I at any residence on privately-owned land.
Table 8: Noise Assessment Criteria
<table>
<tr><th>Land</th><th>Day/Evening/Night</th></tr>
<tr><td>Laurel Park</td><td>37</td></tr>
<tr><td>Bramboyne, Bungabulla, The Glen and Gumbelah</td><td>36</td></tr>
<tr><td>All other privately-owned land</td><td>35</td></tr>
</table>
Note: To identify the land referred to in Table 8 see map in Appendix 6.
Noise generated by the development is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy (as may be updated from time-to-time). Appendix 5 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.
However, these criteria do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement.</td><td>• Cowal Gold Mine – Mine Operations Noise Monitoring, Jul 2012, SLR
• Noise Mitigation Deed – 'Laurel Park', 13 Aug 2012
• Cowal Gold Mine – Mine Operations Noise Monitoring, Jan-Feb 2013, SLR
• Noise Mitigation Deed – 'Gumbelah', 9 Dec 2013
• Letter to DP&I re Noise Mitigation Deed- Gumbelah', 16 Dec 2014
• Noise Mitigation Deed – 'Cowal North', 16 Jan 2014
• Letter to DP&I re Noise Mitigation Deed- Cowal North, 17 Jan 2014
• Letter to DP&I re Noise Mitigation Deed – Laurel Park, 3 Feb 2014</td><td>The quarterly SLR monitoring reports for mine operation noise between 2010 and 2014 concluded that:
"The CGM was observed to be in conformance with the relevant noise requirements during all periods of the operator attended monitoring at all measurement locations."
The quarterly monitoring results reported by Spectrum Acoustics for Q4 2014 concluded that:
" the mine noise did not exceed the operational noise criterion at any monitoring location at any time (i.e daytime, evening or night)."

Noise Mitigation Deeds were agreed and signed between Barrick and the owners of 'Gumbelah' (dated 6 December 2013, "Cowal North' (dated 16 January 2014, and "Laurel Park' (dated 13 August 2012).</td><td>Compliant Ongoing</td></tr>
</table>

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
(d)	**Operating Conditions** The Applicant shall: (i) implement best management practice, including all reasonable and feasible mitigation measures, to minimise the operational, low frequency, and road noise of the development, including mitigation measures to: (ii) minimise the noise impacts of the development during meteorological conditions when the noise limits in this approval do not apply (see Appendix 5); and (iii) carry out regular attended monitoring to determine whether the development is complying with the relevant conditions of this approval, to the satisfaction of the Secretary.		(i)The noise management practices outlined in the Noise Management Plan are consistent with best management practice. (ii) noise management during abnormal meteorological conditions is implemented to reduce potential impact to surrounding residents. (iii) Quarterly attended noise monitoring occurs to determine whether the development is complying with the relevant conditions and the data reviewed to assess compliance.	**Compliant**
(e)	**Noise Management Plan** The Applicant shall prepare and implement a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must: (i) be prepared in consultation with the EPA, and submitted to the Secretary for approval prior to carrying out any development under this approval, unless the Secretary agrees otherwise; (ii) describe the measures that would be implemented to ensure compliance with the noise criteria and operating conditions in this approval; and (iii) include a monitoring program that: • evaluates and reports on: - compliance with the noise criteria in this approval; and - compliance with the noise operating conditions, • defines what constitutes a noise incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents.	• Letter from DoP re Amendments to Noise Management Plan, August 2007 • Letter from DECC re Addendum to Noise Management Plan, 21 Sep 2009 • Letter from DoP re Amendment to the Noise Management Plan, 8 April 2010 • Noise Management Plan, July 2010 • Letter from EPA re Revised Noise Management Plan,21 Nov 2014 • Noise Management Plan, Mar 2015 • Letter from DP&E re Approval of Noise Management Plan, 5 Mar 2015	The Noise Management Plan approved in 2003 was revised and amended in 2007 and 2009. The 5 year revision of the Noise Management Plan was submitted to the DoP on 28 September 2009 and approved on 8 April 2010. Further revision of the Noise Management Plan related to the Modification granted in March 2010 and inclusion of traffic noise management was submitted to DoP on 30 July 2010. Comments were received from DP&I at on 14 August 2012. A revised Noise Management Plan addressing the DP&I comments was submitted to DP&I on 24 December 2012. The Noise Management Plan prepared to satisfy Development Consent 14/98 condition 6.4(e) and approved by DP&E on 5 March 2015.	**Compliant**
6.5	**Visual Management**			
(a)	**Additional Visual Impact Mitigation** Upon receiving a written request from the owner of any residence on privately-owned land which has, or would have, significant direct views of the mining operations and infrastructure on-site during the development, the Applicant shall implement additional visual impact mitigation measures (such as landscaping treatments or vegetation screens) to reduce the visibility of the mining operations and	• Letter from DP&E re DAC Conditions 6.5 and 8.1, 19 Sep 2014	No requests for additional visual impact mitigation measures were received between May 2014 and April 2015	**Not triggered**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	infrastructure from the residences on the privately-owned land. These mitigation measures must be reasonable and feasible, and must be implemented within a reasonable timeframe. If the owner of the residence and the Applicant cannot agree whether there are significant direct views from the residence, then either party may refer the matter to the Secretary for resolution. If within 3 months of receiving this request, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution. *Notes: a The additional visual impact mitigation /measures must be aimed at reducing the visibility of the mining operations on site from affected residences, and do not require measures to reduce the visibility of the mining operations from other locations on the affected properties. The additional visual impact mitigation /measures do not necessarily have to include the implementation of measures on the affected property itself (i.e. the additional measures could involve the implementation of measures outside the affected property boundary that provide an effective reduction in visual impacts).*			
(b)	**<u>Operating Conditions</u>** The Applicant shall: (i) implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development; (ii) ensure no fixed outdoor lights shine directly above the horizontal or above the building line or any illuminated structure; (iii) ensure no in-pit mobile lighting rigs shine directly above the pit wall and other mobile lighting rigs do not shine directly above the horizontal; (iv) ensure that all external lighting associated with the development complies with relevant Australian Standards including Australian Standard A54282 (INT) 1997 - Control of Obtrusive Effects of Outdoor Lighting, or its latest version; and (v) take all reasonable and feasible measures to shield views of mining operations and associated equipment from users of public roads and privately-owned residences, to the satisfaction of the Secretary.		(i) measures to minimise the visual and off-site lighting impacts from the CGM activities have been implemented; (ii) no fixed outdoor lights shine directly above the horizontal or above the building line; (iii) no in-pit mobile lighting rigs shine directly above the pit wall; (iv) external lighting associated with the development complies with Australian Standard A54282 (INT) 1997 - Control of Obtrusive Effects of Outdoor Lighting,; and (v) measures to shield views of mining operations and associated equipment from users of public roads and privately-owned residences are implemented where practicable.	**Compliant**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
7	**TRANSPORT MANAGEMENT**			
7.1	**Road Transport**			
	Mine site access road The Applicant shall use its best endeavours to ensure that the preferred mine access road routes as described in the EA are the only routes used by employees and contractors travelling to and from the mine site.	• Bland Shire Council Decision - Notification of Approval of CGM Access Rd Upgrade, 21 Apr 99 • Letter to BSC re Mine Access Road, 31 Jan 05	The access road route to the mine site from West Wyalong was approved by the Bland Shire Council in 1999 and road works completed and in use in 2006. Access to the CGM site by employees and contractors has been along the new road since late 2006.	**Compliant**
8	**ADDITIONAL PROCEDURES**			
8.1	**Notification of Landowners/Tenants**			
(a)	By the end of September 2014, unless the Secretary agrees otherwise, the Applicant shall notify in writing the owners of; (i) the land listed in Table 7 that they have the right to ask the Applicant to: acquire their land at any stage during the development; and install additional noise mitigation measures at any residence on their land; (ii)any residence on privately-owned land which has, or would have, significant direct views of the mining operations and infrastructure on-site during the development, that they have the right to ask the Applicant to implement additional visual impact mitigation measures (such as landscaping treatments or vegetation screens) to reduce the visibility of the mining operations and infrastructure from the affected residences on the land. (b) As soon as practicable after obtaining monitoring results showing: (i) an exceedance of any relevant criteria in this consent, the Applicant shall notify the affected landowners in writing of the exceedance, and provide regular monitoring results to the landowner until the development is again complying with the relevant criteria; and (ii) an exceedance of the relevant air quality criteria in this consent, the Applicant shall send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land.	• Letter to Westlea re Notification in Accordance with Conditions 6.4 and 8.1/8.3, 18 Sep 2014 • Letter to Westlea Property re Notification in Accordance with Conditions 6.4 and 8.1/8.3, 18 Sep 2014 • Letter to McClintock Property re Notification in Accordance with Conditions 6.4 and 8.1/8.3, 18 Sep 2014	Barrick notified in writing the owners of the land listed in Table 7 that they have the right to ask Barrick to acquire their land at any stage during the development, and/or install additional noise mitigation measures at any residence on their land. No requests were received to April 2015 for Barrick to acquire any property listed in Table 7.	**Compliant**
8.2	**Independent Review**			
	If an owner of privately-owned land considers the development to be exceeding the criteria in this consent, then he/she may ask the Secretary in writing for an independent			**Not triggered**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	review of the impacts of the development on his/her land. If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Applicant shall: (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to: o consult with the landowner to determine his/her concerns; r conduct monitoring to determine whether the development is complying with the relevant impact assessment criteria in condition 6 of this consent; and ¡ if the development is not complying with these criteria then: o determine if more than one mine or development is responsible for the exceedance, and if so the relative share of each mine or development regarding the impact on the land; and o identify the measures that could be implemented to ensure compliance with the relevant criteria; and (b) give the Secretary and landowner a copy of the independent review.			
8.3	**Land Acquisition**			
(a)	Within 6 months of receiving a written request from a landowner with acquisition rights, the Applicant shall make a binding written offer to the landowner based on: (i) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the development, having regard to the: . existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and . presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of any additional noise and/or visual mitigation measures under this consent; (ii) the reasonable costs associated with: . relocat¡ng within the same local government area, or to any other local government area determined by the Secretary; . obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and (iii) reasonable compensation for any disturbance caused by the land acquisition process. However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution.			**Not triggered**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	Upon receiving such a request, the Secretary shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to: (1) consider submissions from both parties; (2) determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (i)-(iii) above; (3) prepare a detailed report setting out the reasons for any determination; and (4) provide a copy of the report to both parties. Within 14 days of receiving the independent value/s report, the Applicant shall make a binding written offer to the landowner to purchase the land at a price not less than the independent value/s determination However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Secretary shall determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (i)-(iii) above, the independent value/s report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions. Within 14 days of this determination, the Applicant shall make a binding written offer to the landowner to purchase the land at a price not less than the Secretary's determination. If the landowner refuses to accept the Applicant's binding written offer under this condition within 6 months of the offer being made, then the Applicant's obligations to acquire the land shall cease, unless the Secretary determines otherwise. (b) The Applicant shall pay all reasonable costs associated with the land acquisition process described in condition 8.3(a) above. (c) If the Applicant and landowner agree that only part of the land shall be acquired, then the Applicant shall also pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.			
9	**ENVIRONMENTAL MANAGEMENT, AUDITING AND REPORTING**			
9.1	**Environmental Management**			

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
(a)	**Environmental Management Strategy** The Applicant shall prepare and implement an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must: (i) be submitted to the Secretary for approval by the end of October 2014, unless the Secretary agrees otherwise; (ii) provide the strategic framework for environmental management of the development; (iii) identify the statutory approvals that apply to the development; (iv) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development; (v)describe the procedures that would be implemented to: . keep the local community and relevant agencies informed about the operation and environmental performance of the development; . receive, handle, respond to, and record complaints; . resolve any disputes that may arise; . respond to any non-compliance; . respond to emergencies; and **(vi)** include: . copies of any strategies, plans and programs approved under the conditions of this consent, and . a clear plan depicting all the monitoring to be **carried out in relation to** the development.	• Environmental Management Strategy, Oct 2014 • Letter from DP&E re Approval of Environmental Management Strategy, 28 Nov 2014	The Environmental Management Strategy was prepared in October 2014 to satisfy this condition and approved by DP&E on 28 November 2014: (i) The EMS was submitted to the Secretary for approval by the end of October 2014; (ii) Section 1 addresses purpose and scope of the EMS; (iii) Section 2 identifies statutory requirements; (iv) Section 3 provides site environmental management structure; (v) Section 5 presents environmental management plans and monitoring programs; section 7 information dissemination; section 8 com plaints and dispute resolution; section 9 non-compliances; and section 10 emergency or incident response. (vi) Appendix C provides Environmental Management Plans, Strategies and Programs.	**Compliant**
(b)	**Annual Review** By the end of July each year, or as otherwise agreed with the Secretary, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary. This review must: (i) describe the development that was carried out in the previous calendar year, and the development that is proposed to be carried out over the next year; (ii) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the: ¡ the relevant statutory requirements, limits or performance measures/criteria; ¡ the monitoring results of previous years; and . the relevant predictions in the EIS; (ii¡) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance, (iv) identify any trends in the monitoring data over the life of the development,; (v) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (vi) describe what measures will be implemented over the next year to improve	• 2013 AEMR • 2014 Annual Review • Letters to DECCW/OEH, NoW, DTIRIS (mineral Resources), DPI(Fisheries), DSC, BSC and CEMCC re 2010 AEMR, 25 Aug 2011 • Letters to DECCW/OEH, NoW, DTIRIS (Mineral Resources), DPI(Fisheries), DSC, BSC and CEMCC re 2011 AEMR, 4 July 2012 • Letters to DECCW/OEH, NoW, DTIRIS (Mineral Resources), DPI(Fisheries), DSC, BSC and CEMCC re 2012 AEMR, 20 Aug 2013	(i) The Annual Environmental Management Report (AEMR) has been prepared by CGM in accordance with the Development Consent 14/98 9.2 and submitted to the Director-General: (a)AEMR section 3 Environmental Management and Performance addresses compliance with the consent conditions and statutory approvals; (b) AEMR section 3 Environmental Management and Performance addresses compliance with the consent conditions and statutory approvals and reviews the effectiveness of the environmental management of the mine in terms of DECCW, NoW, DII(Minerals), DII(Fisheries), and BSC requirements; (c) AEMR section 3 Environmental Management and Performance addresses compliance of the results of environmental monitoring required under this consent or other approvals and includes interpretation and discussion of the results;	**Compliant Ongoing**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	the environmental performance of the development.		(d)AMR section 3.8 Fauna provides results of fauna monitoring, and records of fauna deaths due to mine operations; (e)AEMR section 1.1 Consents, Leases, Licences and Permits lists variations obtained to approvals during the previous year; (f)sections 3.3 and 3.3 address Surface Water and Groundwater outcomes related to the water budget and the quantity of water used from water storages and Bland Creek Palaeochannel bore-field; (g)section 5 Rehabilitation (h)section 6 Activities Proposed for the Next AEMR Period. (i)The first AEMR was completed and submitted within 12 months of the date of this consent and occurred in consultation with the Director-General and other relevant authorities. (ii) Copies of the AEMR have been submitted to the Director-General, DECCW/OEH, NoW, DII(Minerals)/DRIRIS-DRE, DSC, DII(Fisheries), the BSC and CEMCC each year and a copy made available for public information at the BSC library within 14 days of submission to the authorities.	
(c)	**Revision of Strategies, Plans and Programs** Within 3 months of: (i) the submission of an annual review under condition 9.1(b) above; (ii) the submission of an incident report under condition 9.3(a) below; (iii) the submission of an audit under condition 9.2 (a) below; (iv) the submission of an Annual State of the Environment Report under condition g.2(b) below; (v) the approval of any modification to the conditions of this consent; or (vi) a direction of the Secretary under condition 1 .1 (c) of this consent; the Applicant shall review and, if necessary, revise the strategies, plans, and programs required under this consent to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted to the Secretary for approval, unless otherwise agreed with the Secretary.	• Letter to DP&E re Revision of Strategies, Plans and Programs, 20 Oct 2014 • Letter from DP&E re Revision of Strategies, Plans and Programs, 1 Dec 2014 • Letter to DP&E re Status of Revision of Environmental Management Plans, 26 Feb 2015,	The revision/development of the Strategies, Plans and / or Programs for Development Consent 14/98 MOD 11 are progressively being developed for the CGM Extension Project. The requirement for submission to DP&E within 3 months of the approval of the modification (i.e. October 2014) was granted an extension to the timeframe on 1 December 2014. The Environmental Management Strategy, Noise Management Plan, and Indigenous Aboriginal Heritage Management Plan have been submitted to DP&E and the revised documents approved. The status of the revision of the remaining Environmental Management Plans was provided to DP&E on 26 February 2015, and Barrick advised DP&E that the consultation process for the remaining EMP's would be complete by end of May 2015.	**Compliant Ongoing**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.			
(d)	**Community Environmental Monitoring and Consultative Committee** (i) The Applicant shall establish and operate a Community Environmental Monitoring and Consultative Committee (CEMCC) for the development to the satisfaction of the Secretary. This CEMCC must: r be comprised of an independent chair and at least 2 representatives of the Applicant, 1 representative of BSC, 1 representative of the Lake Cowal Environmental Trust (but not a Trust representative of the Applicant), 4 community representatives (including one member of the Lake Cowal Landholders Association); . be operated in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007, or its latest version). . monitor compliance with conditions of this consent and other matters relevant to the operation of the mine during the term of the consent. Note: The CEMCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent. (ii) The Applicant shall establish a trust fund to be managed by the Chair of the CEMCC to facilitate the functioning of the CEMCC, and pay $2000 per annum to the fund for the duration of gold processing operations. The annual payment shall be indexed according to the Consumer Price Index (CPI) at the time of payment. The first payment shall be made by the date of the first Committee meeting. The Applicant shall also contribute to the Trust Fund reasonable funds for payment of the independent Chairperson, to the satisfaction of the Secretary (iii) At least four years prior to mine closure the Applicant shall, in consultation with the CEMCC, identify and discuss post-mining issues, particularly in relation to reduced employment and consequent impacts on West Wyalong, and develop a mine workforce phase out plan. This plan shall be reviewed and updated in consultation with the CEMCC at the commencement of the final year of mining operations. (iv) The Applicant shall, in consultation with the CEMCC, develop appropriate strategies to support activities which promote special interest tourism related to the co-existence of mining and the Lake Cowal environment.	• Charter of the CEMCC • CEMCC Minutes 6 Mar 2013 • CEMCC Minutes 5 Jun 2013 • CEMCC Minutes 5 Sep 2013 • CEMCC Minutes 5 Dec 2013 • CEMCC Minutes 5 Mar 2014 • CEMCC Minutes Sep 2014 • CEMCC Minutes Dec 2014 • CEMCC Minutes Mar 2015	(i)The Community Environmental Monitoring and Consultative Committee (CEMCC) was established in 2003 and the inaugural meeting of the CEMCC occurred on 15 October 2003. The CEMCC meets quarterly and the meeting minutes are made available at Bland Shire Council library for public inspection. (ii)(a) Garry Pearson (Environment Manager), Bronwyn Flynn (Environmental Co-ordinator) and Shane Goodwin (Community Relations Manager) nominated Barrick representatives. (b) Copies of complaints and other relevant documentation is provided as required to the CEMCC. (c) Barrick supply information to the Committee as requested, on environmental performance. (d) Site inspections are arranged as requested by the CEMCC (e) The CEMCC Meetings are held at the CGM site offices. (iii) Chair of CEMCC Margaret MacDonald-Hill. Barrick pay an annual contribution of $2000 (plus CPI) to Bland Shire Council, and the funds are held in trust for the purpose of the CEMCC. (iv) Not yet applicable.	**Compliant Ongoing**
9.2	**Independent Auditing and Review**			

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
(a)	Independent Environmental Audit By the end of July 2016, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: . be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary; . include consultation with the relevant agencies, BSC and the CEMCC; . assess the environmental performance of the development and assess whether it is complying with the requirements in this consent and any other relevant approvals (such as environment protection licences and/or mining lease (including any assessment, plan or program required under this consent); ¡ review the adequacy of any approved strategy, plan or program required under this consent or the abovementioned approvals; and . recommend measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under this consent. *Note: This audit team must be led by a suitably qualified auditor, and include ecology and rehabilitation experts, and any other fields specified by the Secretary.* (ii) Within 3 months of commissioning this audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of these recommendations as required. The Applicant must implement these recommendations, to the satisfaction of the Secretary.	• Independent Environmental Audit Report, May 2007 • Independent Environmental Audit Report, May 2008 • Independent Environmental Audit Report, May 2009 • Independent Environmental Audit, Trevor Brown & Associates, April 2010 • Independent Environmental Audit, Trevor Brown & Associates, April 2011 • Letters to DP&I, BSC, OEH, NoW, DI&I (Minerals) re Independent Environmental Audit, 20 May 2011 • Independent Environmental Audit, Trevor Brown & Associates, April 2012 • Independent Environmental Audit, Trevor Brown & Associates, April 2013 • Independent Environmental Audit, Trevor Brown & Associates, April 2014	An Independent Third Party Environmental Audit has been conducted to address the requirements if condition 8.8 and the reports submitted to DP&I, BSC, DECCW/OEH, NOW, DI&I (Minerals) and CEMCC within 2 weeks of finalisation of the report by the independent auditors and submission to CGM. An Independent Environmental Audit of the CGP was conducted in 2008 and 2009 at the request of Barrick, to meet the recommendation of the IMP. An Independent Audit was conducted for the period April 2007 to April 2010, and 2011 to 2014,to satisfy Development Consent 14/98 8.8(a). The Independent Environmental Audits of the CGP have continued to be conducted annually at the request of Barrick Australia.	**Compliant Ongoing**
(b)	**Independent Monitoring Panel**			
	(i) The Applicant shall at its own cost establish an Independent Monitoring Panel prior to commencement of construction. The Applicant shall contribute $30,000 per annum for the functioning of the Panel, unless otherwise agreed by the Secretary. The annual payment shall be indexed according to the Consumer Price Index at the time of payment. The first payment shall be paid by the date of commencement of construction and annually thereafter. Selection of the Panel representatives shall be agreed by the Secretary in consultation with relevant government agencies and the CEMCC. The Panel shall at least comprise two duly qualified independent environmental scientists and a	• Eighth Independent Monitoring Panel Report, Oct 2012 • Ninth Independent Monitoring Panel Report, Oct 2013 (received by Barrick 2 Jun 2014) • Tenth Independent Monitoring Panel Report, Oct 2013, 1 Dec 2014	The Independent Monitoring Panel was established by Barrick with two independent environmental scientists nominated by the Director-General. The current members are: Dr Craig Miller CSIRO Sustainable Ecosystems Emeritus Prof. Clive Bell University of Queensland; and NSW Department of Planning and Infrastructure (DP&E) Barrick deposits $30,000 (plus CPI) annually into a special account (Independent Panel Monitoring Trust) for the functioning of the panel. The IMP prepares a report for the DP&I / DP&E annually:	**Compliant**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
	representative of the Secretary. (ii) The panel shall: • provide an overview of the annual reviews and independent audits required by conditions 9,1(b) and 9.2(a) above; • regularly review all environmental monitoring procedures undertaken by the Applicant, and monitoring results; and • provide an Annual State of the Environment Report for Lake Cowal with particular reference to the on-going interaction between the mine and the Lake and any requirements of the Secretary. The first report shall be prepared one year after commencement of construction. The report shall be prepared annually thereafter unless otherwise directed by the Secretary and made publically available on the Applicant's website for the development within two weeks of the report's completion.		• Ninth IMP Report was submitted to DoP and provided to CGM on 2 June 2014 • Tenth IMP Report was provided to Barrick on 1 December 2014 b)(ii)(a) The Independent Monitoring Panel has commented on the Independent Environmental Audit in each of the annual reports; (b)(ii)(b) environmental monitoring procedures and monitoring results are commented on in the annual reports; (b)(ii)(c) The IMP have prepared an Annual Report for the Cowal Gold Project. The report is submitted to the Director-General and agencies that receive the AEMR. The report is also made publically available at the Bland Shire Council and on the Barrick website.	
9.3	**Reporting**	•		
(a)	**Incident Reporting** The Applicant shall immediately notify the Secretary and any other relevant agencies of any incident related to the development. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.			**Noted**
(b)	**Regular Reporting** The Applicant shall provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.		The AEMR / Annual Review provides regular reporting on the environmental performance for the CGM in accordance with the reporting arrangements in the environmental management plans and programs approved under the Development Consent 14/98 conditions.	**Compliant Ongoing**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
9.4	**Access to Information** The Applicant shall: (a)make the following information publically available on its website: (i) the EIS; (i.e. current statutory approvals for the development) (iii) approved strategies, plans or programs required under the conditions of this consent; (iv) a comprehensive summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent; (v) a complaints register, which is to be updated on a monthly basis; (vi) minutes of CEMCC meetings; (vi} the last five annual reviews; (i) any Independent environmental audit, and the Applicant's response to the recommendations in any audit; and (ii) (ix) any other matter required by the Secretary; and (b) keep this information up to date, to the satisfaction of the Secretary.	• **http://www.barrick.com/operations/australia/cowal/**	The Barrick Cowal Gold Mine makes the following information publically available on its website: • E42 Modified Request Environmental Assessment, Oct 2009 • Extension Modification Environmental Assessment, Sep 2012 • Environmental Management Plans • Environment Monitoring Data • Complaints Register • Independent Monitoring Panel • CEMCC Minutes • Statutory Approvals The last five Annual Reviews/AEMR's were not available on the website at the date of this audit.	**Compliant Ongoing** **Administrative Non-compliance**
	APPENDIX 5 NOISE COMPTIANCE ASSESSMENT			
1	**Applicable Meteorological Conditions** The noise criteria in the conditions are to apply under all meteorological conditions except the following (a) during periods of rain or hail; (b) average wind speed at microphone height exceeds 5 m/s; or wind speeds greater than 3 m/s measured at 10 m above ground level.			**Noted**
2	**Determination of Meteorological Conditions** Except for wind speed at microphone height, the data to be used for determining meteorological conditions shall be that recorded by the meteorological station located on the site.	• Noise Management Plan, Mar 2015	The meteorological conditions at the time of noise surveys is reported in the Noise Monitoring Reports, as recorded by the meteorological station located on the site	**Compliant**
3	**Compliance Monitoring** Attended monitoring is to be used to evaluate compliance with the relevant conditions of this approval	• Noise Management Plan, Mar 2015	Attended noise monitoring surveys are conducted quarterly.	**Compliant**

No.	DA 14/98 Minister's Condition of Approval	Verification	Comments	Compliance
4	This monitoring must be carried out quarterly, unless the Secretary directs otherwise. *Note: The Secretary may direct that the frequency of attended monitoring increase or decrease at any time during the life of the development.*	• Noise Management Plan, Mar 2015	Noise monitoring is conducted quarterly in accordance with Development Consent 14/98 MOD 11 condition 6.4(e).	**Compliant**
5	Unless the Secretary agrees otherwise, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the NSW Industrial Noise Policy (as amended from time to time), in particular the requirements relating to: (a) monitoring locations for the collection of representative noise data; (b) meteorological conditions during which collection of noise data is not appropriate, (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and (d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration.	• Noise Management Plan, Mar 2015	Noise monitoring is carried out in accordance with the relevant requirements for reviewing performance set out in the NSW Industrial Noise Policy.	**Compliant**

Attachment B Environment Protection Licence

Attachment B - Environment Protection Licence No. 11912

<table>
<tr><th>EPL No.</th><th>EPL Condition</th><th>Audit Evidence</th><th>Comments</th><th>Compliance</th></tr>
<tr><td>A1</td><td>What the licence authorises and regulates</td><td></td><td></td><td></td></tr>
<tr><td>A1.1</td><td>This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.
Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.
<table>
<tr><th>Scheduled Activity</th><th>Fee Based Activity</th><th>Scale</th></tr>
<tr><td>Concrete works</td><td>Concrete works</td><td>0-13000m^3 produced</td></tr>
<tr><td>Crushing, grinding or separating</td><td>Crushing, grinding or separating</td><td>>2000000 T processed</td></tr>
<tr><td>Extractive activities</td><td>Land-based extractive activity</td><td>> 2000000 T extracted, processed or stored</td></tr>
<tr><td>Mineral processing</td><td>Mineral processing</td><td>> 2000000 - T processed</td></tr>
<tr><td>Mining for minerals</td><td>Mining for minerals</td><td>> 5000000 - T produced</td></tr>
</table></td><td></td><td>Scheduled activities undertaken at the Cowal Gold Mine are in accordance with the maximum scale specified in this condition.

Cowal Gold Mine has not exceeded the scale of minerals mined or mineral processed between May 2013 and May 2014.</td><td>Compliant</td></tr>
<tr><td>A1.2</td><td>The licensee may carry out scheduled development works necessary for the activity of mineral processing to be undertaken at the premises</td><td></td><td></td><td></td></tr>
<tr><td>A2</td><td>Premises to which this licence applies</td><td></td><td></td><td></td></tr>
<tr><td>A2.1</td><td>Cowal Gold Project 38km North East of West Wyalong.
Lake Cowal Road, West Wyalong NSW 2671
Premises include the land defined by ML 1535.</td><td></td><td></td><td>Noted</td></tr>
<tr><td>A3</td><td>Other activities</td><td></td><td></td><td></td></tr>
<tr><td>A3.1</td><td>This licence applies to all other activities carried on at the premises, including:
Chemical storage, contaminated soil treatment, sewage treatment, waste disposal (application to land)</td><td></td><td></td><td>Noted</td></tr>
<tr><td>A4</td><td>Information supplied to the EPA</td><td></td><td></td><td></td></tr>
<tr><td>A4.1</td><td>Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.
In this condition the reference to "the licence application" includes a reference to:</td><td></td><td></td><td>Noted</td></tr>
</table>

<table>
<tr><td></td><td>(a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
(b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.</td><td></td><td></td><td></td></tr>
<tr><td>A4.2</td><td>For the purposes of condition A4.1, the licence application includes:
1) Development Consent Cowal Project
2) Cowal Gold Project EIS
3) List of Initial development activities associated with the construction of the Cowal Gold Project.
4) Cowal Gold Project – SIS
5) Modifications to the Cowal Gold Project approved by the DoP.</td><td>• Development Consent Cowal Project and Modifications to the Cowal Gold Project approved by the Department of Planning
• Cowal Gold Project – EIS
• Cowal Gold Project – SIS
• Modifications 1-11 to Cowal Gold Project EIS</td><td></td><td>Noted</td></tr>
<tr><td colspan="5">Discharges to air and water and applications to land</td></tr>
<tr><td>P1</td><td>Location of monitoring/discharge points and areas</td><td></td><td></td><td></td></tr>
<tr><td>P1.1</td><td>The following points referred to in the table are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.
Air
<table>
<tr><td>1</td><td>Dust Monitoring</td><td>Dust gauge located approximately 1km west of ML1535 boundary, labelled as "McLintocks Shed" in Figure 5 'Dust Monitoring Locations' of the addendum to the "Cowal [illegible] Management Plan" dated August 2007.</td></tr>
<tr><td>2</td><td>Dust Monitoring</td><td>Dust gauge located south of the southern waste emplacement, labelled as "Site Office" in Figure 5 'Dust Monitoring Locations' of addendum to the "Cowal Gold Project D[illegible]dated August 2007.</td></tr>
<tr><td>3</td><td>Dust Monitoring</td><td>Dust gauge located approximately 1.5km east of ML1535 boundary, labelled as "DG5" in Figure 5 'Dust Monitoring Locations' of the addendum to the "Cowal Gold Proje[illegible]n" dated August 2007.</td></tr>
<tr><td>4</td><td>Dust Monitoring</td><td>Dust gauge located approximately 3.5km south of ML1535 boundary, labelled as "DG9" in Figure 5 'Dust Monitoring Locations' of the addendum to the "Cowal Gold Proj[illegible]an" dated August 2007.</td></tr>
<tr><td>5</td><td>Dust Monitoring</td><td>Dust gauge located within ML1535 and north of the open pit, labelled as "Site 52" in Figure 5 'Dust Monitoring Locations' of the addendum to the "Cowal Gold Project Du[illegible]gust 2007.</td></tr>
<tr><td>6</td><td>Dust Monitoring</td><td>Dust gauge and high volume sampler located approximately 3.5 km north of ML1535 boundary, labelled as "DG1" and "HV1" in Figure 5 'Dust Monitoring Locations' of th[illegible]al Gold Project Dust Management Plan" dated August 2007.</td></tr>
</table></td><td>• Quarterly Monitoring Reports to DECCW/OEH
• 2012 AEMR
• 2013 AEMR
• 2014 Annual Review
• Dust Management Plan</td><td>The dust deposition gauges and high volume sampler monitoring has continued between May 2013 and May 2014 in accordance with the requirements of the EPL conditions at the locations nominated in EPL condition P1.1and the CGM Dust Management Plan.

Directional dust deposition gauges (Frisbees) were added to the dust monitoring program in September 2009 to provide directional data and supplement the existing University of Sydney depositional dust gauges.

Due to the increase in water levels in Lake Cowal between May 2011 and April 2012, monitoring of twelve (12) of the depositional dust gauges and six (6) dust Frisbees was suspended in the lake area due to access problems and inundation.</td><td>Compliant

Compliant</td></tr>
<tr><td>P1.2</td><td>The points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.</td><td>• Quarterly Monitoring Reports</td><td>CGM water monitoring was conducted at the EPL nominated locations and in accordance with the Site Water Management Plan and Surface Water, Groundwater, Meteorological and Biological Monitoring Program.</td><td>Compliant</td></tr>
<tr><td></td><td>Water and Land
<table>
<tr><td>12</td><td>Stormwater quality monitoring</td><td>Northern waste emplacement contained water storage labelled as "D1" in Figure 8 'Water Management Plan Operations Phase Year 3' of the "Cowal Gold Project Addendum to Site Water Management Plan" dated December 2006.</td></tr>
</table></td><td>• Quarterly Monitoring Reports
• CGP Site Rainfall Records
• Surface Water Event Monitoring Field Sheets (for rainfall events of 20mm or greater).</td><td>Surface water monitoring occurred following EPL trigger rainfall events (i.e. >20mm rainfall/24hrs) for the surface water monitoring program. Trigger events occurred on the following occasions between March 2013 and May 2014:

2 June 2013 26.6mm</td><td>Compliant</td></tr>
</table>

	13	Stormwater quality monitoring	Southern waste emplacement contained water storage labelled as "D4" in Figure 8 'Water Management Plan Operations Phase Year 3' of the "Cowal Gold Project Addendum to Site Water Management Plan" dated December 2006.	• Site Water Management Plan • Surface Water, Groundwater, Meteorological and Biological Monitoring Program • 2012 AEMR • 2013 AEMR • 2014 Annual Review	12 June 2013 23.8mm 17 September 2013 54.4mm 1 March 2014 26.6mm Groundwater monitoring has been conducted from piezometers listed in P1.2 as EPA Identification Points 19-40, in accordance with the EPL requirements.	
	14	Ambient Water quality monitoring	Surface water point within Lake Cowal labelled as "P1" in Figure 6 'Lake Monitoring Sites' of the "Cowal Gold Project Surface Water, Groundwater, Meteorological and Biological Monitoring Programme – Mine Operations" dated April 2005.			
	15	Ambient Water quality monitoring	Surface water point within Lake Cowal labelled as "P2" in Figure 6 'Lake Monitoring Sites' of the "Cowal Gold Project Surface Water, Groundwater, Meteorological and Biological Monitoring Programme - Mine Operations" dated April 2005.			
	16	Ambient Water quality monitoring	Surface water point within Lake Cowal labelled as "P3" in Figure 6 'Lake Monitoring Sites' of the "Cowal Gold Project Surface Water, Groundwater, Meteorological and Biological Monitoring Programme - Mine Operations" dated April 2005.			
	17	Ambient Water quality monitoring	Surface water point within Lake Cowal labelled as "B1" in Figure 6 'Lake Monitoring Sites' of the "Cowal Gold Project Surface Water, Groundwater, Meteorological and Biological Monitoring Programme - Mine Operations" dated April 2005.			
	18	Ambient Water quality monitoring	Surface water point within Lake Cowal labelled as "B5" in Figure 6 'Lake Monitoring Sites' of the "Cowal Gold Project Surface Water, Groundwater, Meteorological and Biological Monitoring Programme - Mine Operations" dated April 2005.			
	19	Groundwater monitoring	Piezometer located up gradient of southern tailings storage labelled as "P555A-R" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	20	Groundwater monitoring	Piezometer located up gradient of southern tailings storage labelled as "P555B" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	21	Groundwater monitoring	Piezometer located up gradient of northern tailings storage labelled as "P558A and R" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	22	Groundwater monitoring	Piezometer located down gradient of southern tailings storage labelled as "P412A-R" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			

	23	Groundwater monitoring	Piezometer located down gradient of southern tailings storage labelled as "P412B" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	24	Groundwater monitoring	Piezometer located down gradient of southern tailings storage labelled as "P414A" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	25	Groundwater monitoring	Piezometer located down gradient of southern tailings storage labelled as "P414B" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	26	Groundwater monitoring	Piezometer located near the process plant area labelled as "PP03" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	27	Groundwater monitoring	Piezometer located near the process plant area labelled as "PP04" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	30	Groundwater monitoring	Piezometer located down gradient of southern tailings storage labelled as "P417A" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	31	Groundwater monitoring	Piezometer located down gradient of southern tailings storage labelled as "P417B" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	32	Groundwater monitoring	Piezometer located down gradient of northern tailings storage labelled as "P418A" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	33	Groundwater monitoring	Piezometer located down gradient of northern tailings storage labelled as "P418B" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	34	Groundwater monitoring	Piezometer located down gradient of northern tailings storage labelled as "TSFNA", "TSFNB" and "TSFNC" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	36	Groundwater monitoring	Pit dewatering bore labelled as "PDB1A and B" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	38	Groundwater monitoring	Pit dewatering bore labelled as "PDB3A and B" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			

	40	Groundwater monitoring	Pit dewatering bore labelled as "PDB5A and B" in Figure 14 "Surface and Groundwater Monitoring Locations - Project ML Area" dated 30 March 2009.			
	41	Northern waste emplacement leachate quality monitoring	Northern waste emplacement external toe drain. Exact site to be determined upon commencement of waste rock dump. Site will be designated by EPA monitoring point signage and will move as required with waste rock dump extensions.			
	42	Southern waste emplacement leachate quality monitoring	Southern waste emplacement external toe drain. Exact site to be determined upon commencement of waste rock dump. Site will be designated by EPA monitoring point signage and will move as required with waste rock dump extensions.			
	43	Perimeter waste emplacement leachate quality monitoring.	Perimeter waste emplacement external toe drain point. Exact site to be determined upon commencement of waste rock dump. Site will be designated by EPA monitoring point signage and will move as required with waste rock dump extensions.			
	44	Groundwater quality monitoring	Groundwater monitoring bore located to the east of the northern tailings storage labelled as "MON-01A and B" in Figure 14 "Surface and Ground water Monitoring Locations - Project ML Area" dated 30 March 2009.			
	45	Groundwater quality monitoring	Groundwater monitoring bore located to the south of the southern tailings storage labelled as "MON-02A and B" in Figure 14 "Surface and Ground water Monitoring Locations - Project ML Area" dated 30 March 2009.			
	48	Water quality monitoring point	Automated sampler at the process plant labelled as "Monitoring Point 48" on Figure 1 "Monitoring Location for CNwad levels in Tailings Slurry Stream at the Process Plant" submitted to the DECCW on 3-12-2010 held on file LIC07/2610-08			
P1.3	The utilisation areas referred to in the table if identified in this licence are for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.					**Noted**
P1.4	The following points in the table are identified in this licence for the purposes of the monitoring of weather parameters at the point					
	EPA No.	**Type of Monitoring Point**	**Description of location**	• Dust Management Plan, • Monthly Weather Station Reports – Jan 2010 to May 2015, Sentinel P/L • Cowal Calibration Report, Sentinel Pty Ltd, 21 Mar 2014	The meteorological station installed at the CGM site provides continuous 15-minute data recording for each parameter, and this data is downloaded daily to the CGM computer system. The meteorological station is checked quarterly for calibration and maintenance by Sentinel Pty Ltd and a monthly summary report of the meteorological data is provided to CGM by Sentinel.	**Compliant**
	7	Weather analysis	*Weather station labeled as "Meteorological Station" in Figure 5 'Dust Monitoring Locations' of the "Cowal Gold Project Dust Management Plan" August 2003.*			

<table>
<tr><td></td><td></td><td>• Cowal Calibration Report, Sentinel Pty Ltd, 13 Jun 2014
• Cowal Calibration Report, Sentinel Pty Ltd, 23 Jan 2015
• Cowal Calibration Report, Sentinel Pty Ltd, 23 Apr 2015</td><td></td><td></td></tr>
<tr><td colspan="5">3 Limit conditions</td></tr>
<tr><td>L1</td><td>Pollution of waters</td><td></td><td></td><td></td></tr>
<tr><td>L1.1</td><td>Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.</td><td>• Protection of the Environment Operations Act 1997 section 120</td><td></td><td>Noted</td></tr>
<tr><td>L2</td><td>Concentration limits</td><td></td><td></td><td></td></tr>
<tr><td>L2.1</td><td>For each monitoring/discharge point or utilisation area specified in the tables the concentration of a pollutant discharged at that point or applied to the area, must not exceed the concentration limits specified for that pollutant in the table.</td><td></td><td></td><td>Noted</td></tr>
<tr><td>L2.2</td><td>Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.</td><td></td><td></td><td>Noted</td></tr>
<tr><td>L2.3</td><td>To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s.</td><td></td><td></td><td>Noted</td></tr>
<tr><td></td><td>Point 48
<table><tr><th>Pollutant</th><th>Units of measure</th><th>90percentile concentration limit</th><th>100 percentile concentration limit</th></tr><tr><td>CN_{WAD}</td><td>mg/l</td><td>20</td><td>30</td></tr></table></td><td>• Cyanide Management Plan 2010, (revision)
• Cyanide Management Plan, revision , Dec 2010
• Monthly Cyanide Monitoring Results, May 2013 to May 2014</td><td>Monitoring of the discharge to the tailings storage facilities is conducted twice daily. All results of the cyanide monitoring have been < 20mg CN_{WAD}/L (90 percentile) and no CN_{WAD} results have exceeded the 30mg CN_{WAD} /L for the May 2013 to May 2014 period. The cyanide results are reported to the DECCW/OEH (and DI&I/DTIRIS and DP&I) on a monthly basis.</td><td>Compliant</td></tr>
<tr><td>L3</td><td>Waste</td><td></td><td></td><td></td></tr>
<tr><td>L3.1</td><td>The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.</td><td></td><td>No waste material from any outside premises has been received onto the CGM site.</td><td>Compliant</td></tr>
<tr><td>L3.2</td><td>For the purposes of condition L3.1:
(a) Effluent, waste rock and tailings generated at the premises are not defined as “waste”.</td><td></td><td></td><td>Noted</td></tr>
</table>

L3.2	(b) Waste generated at the premises described in Attachment A 'Cowal Gold Project Proposed Bioremediation Facility' of the licence variation application supplementary material received by DECC on 16 June 2008 and classified as general solid waste (putrescible) in accordance with the *Waste Classification Guidelines* (DECC, 2008) is permitted by this licence to be disposed of at the premises. Disposal of this waste must be undertaken in accordance with the methods described in Attachment A of the licence variation application supplementary material received by DECC on 16 June 2008, and the *Cowal Gold Project - Hazardous Waste and Chemical Management Plan*.	• Email to DECC/DPI-Minerals re Bioremediation Facility, 10 Dec 2008 • *Waste Classification Guidelines* (DECC, 2008) • EPL Variation 6 Apr 2009 • Waste Classification Report – Bioremediation Area, Barson, Mar 2012	The location co-ordinates and layout plans for the on-site bioremediation treatment area were provided to DECC/DPI-Minerals in December 2008 following Cultural Clearance of the proposed area in November 2008. The CGM bioremediation bed involves contaminated soil being mixed with straw to promote biological breakdown of hydrocarbons. The bioremediation treatment area continues to be used for treatment and management of minor amounts of hydrocarbon contaminated soils from the site. A Waste Classification Report – Bioremediation Area CGM (Barson, dated March 2012) concluded that: "*Based on the findings of this waste classification, tested soils collected from cell A and cell C on the 14 February 2012 are suitable for on-site disposal at Cowal Gold Mine, in accordance with all relevant disposal conditions and practices".*	**Compliant**
L3.2	(c) Waste generated at the premises described in Attachment B 'Cowal Gold Project Proposed Trash Screen Oversize Waste Management' of the licence variation application supplementary material received by DECC on 16 June 2008 and classified as general solid waste (putrescible) in accordance with the *Waste Classification Guidelines* (DECC, 2008) is permitted by this licence to be disposed of at the premises. Disposal of this waste must be undertaken in accordance with the methods described in Attachment B of the licence variation application supplementary material received by DECC on 16 June 2008, and the *Cowal Gold Project - Hazardous Waste & Chemical Management Plan*.	• Waste Classification Report – Bioremediation Area, Barnson, Mar 2012	All waste described in Attachment B of the licence variation application received by DECC on 16 June 2008 has been managed at the CGM premises in accordance with EPL condition L5.2(c).	**Compliant**
L3.3	(d) Waste generated at the premises described in Attachment D 'Cowal Gold Project Proposed On-site Waste Management' of the licence variation application supplementary material received by DECC on 16 June 2008 and classified as general solid waste (putrescible) and/or general solid waste (non-putrescible) in accordance with the *Waste Classification Guidelines* (DECC, 2008) is permitted by this licence to be disposed of at the premises. Disposal of this waste must be undertaken in accordance with the conditions of this licence and within the waste rock emplacements only.	• Waste Classification Report – Bioremediation Area, Barson, Mar 2012	All waste described in Attachment D of the licence variation application received by DECC on 16 June 2008 is disposed of at the CGM premises in accordance with EPL condition L5.2(d).	**Compliant**
L3.4	(e) Waste generated at the premises as described in Attachment A 'Cowal Gold Mine Proposed On-Site Waste Tyre Management' of the licence variation application supporting documentation received by the DECC on the 4 February 2009 and classified as special waste in accordance with the Waste	•		

<table>
<tr><td></td><td>Classification Guidelines (DECC 2008) is permitted by this licence to be disposed at the premises.
Disposal of this waste must be undertaken in accordance with the conditions of this licence and within the waste rock emplacements only.</td><td></td><td></td><td></td></tr>
<tr><td>L4</td><td>Noise Limits</td><td></td><td></td><td></td></tr>
<tr><td>L4.1</td><td>Noise generated from the premises must not exceed criteria outlined in Table 1 at any residence on privately owned land, as shown on the plan Appendix 6 of the Cowal Gold Mine development consent DA 14/98, as modified on 22 July 2014.
Table 1
<table>
<tr><th>Location</th><th>Day/Evening/Night dB(A) LAeq(15 minute)</th></tr>
<tr><td>Laurel Park</td><td>37</td></tr>
<tr><td>Bungabulla</td><td>36</td></tr>
<tr><td>Bramboyne</td><td>36</td></tr>
<tr><td>The Glen</td><td>36</td></tr>
<tr><td>Bungabulla</td><td>36</td></tr>
<tr><td>All other residences</td><td>35</td></tr>
</table>
Note: • The noise impact assessment criteria do not apply if the Licensee has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Licensee has advised the NSW Department of Planning and Environment in writing of the terms of the agreement. • The noise impact assessment criteria do not apply to property and land subject to acquisition upon request as iL4.1dentified in Table 7 of Development Consent DA 14/98.
Note: LAeq means the equivalent continuous noise level – the level of noise equivalent to the energy-average of noise levels occurring over a measurement period</td><td>• Noise Management Plan, November 2004
• Operating Noise Monitoring, SLR , Jan 2014
• Operating Noise Monitoring, SLR, Jul 2014
• Operating Noise Monitoring, Spectrum, Oct 2014
• Operating Noise Monitoring, Spectrum, Jan 2015</td><td>Barrick has approval for the E42 Modification to CGM in accordance with the requirements of Modification to Development Consent (DA 14/98 Mod 6) dated 10 March 2010.
Barrick revised the CGM Noise Management Plan (NMP) dated July 2010 as required by Consent Condition 6.4(g) and engaged SLR Consulting Australia Pty Ltd to conduct six monthly mine operating noise monitoring during January-February and July each year in accordance with the approved NMP.

Results from the day-time, evening and night-time operator attended survey showed that the measured intrusive noise levels were reported to be compliant with the relevant noise assessment criteria at all measurement locations. The SLR Report March 2014 concluded that -"All operator attended noise recordings were measured to be below the consent criteria during all periods of the day at all locations monitored. Consequently the CGM was observed to be in compliance with the relevant noise requirements</td><td>Compliant</td></tr>
<tr><td>L4.2</td><td>Noise generated from the premises is to be measured in accordance with the relevant requirements and exemptions of the "NSW Industrial Noise Policy".</td><td></td><td>The noise monitoring procedures are consistent with and in accordance with the NSW Industrial Noise Policy.</td><td>Compliant</td></tr>
<tr><td>L4.3</td><td>The noise criteria identified in condition L4.1 apply under meteorological conditions of temperature inversion conditions of up to 8.0°C/100 metres and wind speed up to 1 metre per second at 10 metres above ground level.
The 1 metre per second drainage-flow wind applies where the development is at higher altitude than the residential receiver, with no intervening higher ground. These criteria will not apply during rainfall.
The noise criteria identified in condition L4.1 do not apply during: a) periods of rain or hail; b) average wind speeds at microphone height that exceed 5 metres per second; or c) average wind speeds that exceed 3 metres per second measured at 10 metres above ground level.</td><td>• Operating Noise Monitoring, SLR , Jan 2014
• Operating Noise Monitoring, SLR, Jul 2014
• Operating Noise Monitoring, Spectrum, Oct 2014
• Operating Noise Monitoring, Spectrum, Jan 2015</td><td>Weather conditions are noted during noise surveys and reported in the monitoring reports.</td><td>Compliant</td></tr>
</table>

L4.4	Attended monitoring is to be used to evaluate compliance with conditions L4.1 to L4.3	• Operating Noise Monitoring, Heggies, Jul 2010 • Operating Noise Monitoring, Heggies , Jan 2014 • Operating Noise Monitoring, SLR, Jul 2014 • Operating Noise Monitoring, Spectrum, Oct 2014 • Operating Noise Monitoring, Spectrum, Jan 2015	Operating noise surveys are conducted by attended monitoring.	**Compliant**
L4.5	Monitoring is to be carried out quarterly unless otherwise directed by the Secretary of NSW Department of Planning and Environment.		Noise monitoring is conducted quarterly.	**Compliant**
L5	**Blasting**			
L5.1	The airblast overpressure level from blasting operations at the premises at residences on privately owned land, when measured at the locations defined in condition M7.1 must not exceed 120 dB(Lin Peak) at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	• Blast Management Plan, August 2003 • Review of Blast Monitoring Report 2010, The Saros Group, Feb 2011 • Review of Blast Monitoring Report 2011, The Saros Group, Mar 2012 • Review of Blast Monitoring Report 2012, The Saros Group, Mar 2013 • Review of Blast Monitoring Report 2012, The Saros Group, Apr 2014	Monitoring of blasts between January 2013 and March 2014 demonstrated compliance with the overpressure and vibration Day and Evening criteria. Five blast events exceeded the 95dBL criteria on Sundays and Public Holidays, during January 2013 to March 2014. No blasts occurred at night.	**Compliant**
L5.2	The overpressure level from blasting operations at the premises at residences on privately owned land, when measured at the locations defined in condition M7.1 must not exceed 115dB (Lin Peak) during the day for more than five per cent of the total number of blasts over a period of 12 months. The overpressure level from blasting operations at the premises at residences on privately owned land, when measured at the locations defined in condition M7.1 must not exceed 105dB (Lin Peak) during the evening for more than five per cent of the total number of blasts over a period of 12 months. The overpressure level from blasting operations at the premises at residences on privately owned land, when measured at the locations defined in condition M7.1 must not exceed 95dB (Lin Peak) at night or on Sundays and public holidays (24 hours) for more than five per cent of the total number of blasts over a period of 12 months. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.			
L5.3	Ground vibration peak particle velocity from the blasting operations at the premises at residences on privately owned land, when measured at the locations defined in condition M7.1 must not exceed 10 mm/sec at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	• Blast Management Plan August 2003 • Review of Blast Monitoring Report 2010, The Saros Group, Feb 2011 • Review of Blast Monitoring Report 2011, The Saros Group, Mar 2012	No blasts between January 2013 and March 2014 exceeded the ground vibration (ppv) criteria of 5mm/sec at any of the fixed monitor locations.	**Compliant**
L5.4	Ground vibration peak particle velocity from the blasting operations at the premises at residences on privately owned land, when measured at the locations defined in condition M7.1 must not			**Compliant**

	exceed 5 mm/sec during the day for more than five per cent of the total number of blasts over a period of 12 months. Ground vibration peak particle velocity from the blasting operations at the premises at residences on privately owned land, when measured at the locations defined in condition M7.1 must not exceed 2 mm/sec during the evening for more than five per cent of the total number of blasts over a period of 12 months. Ground vibration peak particle velocity from the blasting operations at the premises at residences on privately owned land, when measured at the locations defined in condition M7.1 must not exceed 1 mm/sec at night and on Sundays and public holidays (24 hours) for more than five per cent of the total number of blasts over a period of 12 months. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	• Review of Blast Monitoring Report 2012, The Saros Group, Mar 2013 • Review of Blast Monitoring Report 2012, The Saros Group, Apr 2014		
L6	**Potentially Offensive Odour**			
L6.1	No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the *Protection of the Environment Operations Act 1997*. *Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.*		No odour complaints have been received in relation to the operation of the process plant.	**Compliant**
Operating conditions				
O1	**Activities must be carried out in a competent manner**			
O1.1	Licensed activities must be carried out in a competent manner. This includes: (a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and (b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.			**Noted**
O2	**Maintenance of plant and equipment**			
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity: (a) must be maintained in a proper and efficient condition; and (b) must be operated in a proper and efficient manner.		All equipment used for the mining operations is maintained by CGM in the onsite Maintenance Workshops, with noise and vehicle emission controlled to meet the vehicle and equipment specifications.	**Compliant**

			Blast monitoring equipment undergoes maintenance and annual calibration in February/March by the Saros Group. Calibration of the meteorological station equipment occurs quarterly - Sentinel Pty Ltd.	
O2.2	All persons associated with the licensee including employees, agents' licensee, contractors and subcontractors must be advised of their responsibilities and liabilities under the *Protection of the Environment Operations Act* 1997.	• Barrick Induction Training package • Training Course Register for Barrick personnel • Training Course Summary for Barrick CGM • CGM Environmental Awareness Handbook • CGM Oil and Chemical Spill Response Awareness Handbook	Training of Barrick personnel in the responsibilities and liabilities under the *Protection of the Environment Operations Act* is conducted annually. Induction occurs for all CGM personnel and contractors and the Environmental Awareness Handbook and Oil and Chemical Spill Response Awareness Handbook, prepared by the CGM, are provided to all CGM personnel.	**Compliant**
O3	**Dust**			
O3.1	Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust		Activities occurring at the CGM site are carried out in a manner that minimises the generation, or emission from the premises, of wind-blown or traffic generated dust.	**Compliant Ongoing**
O4	**Waste Management**			
O4.1	The waste rock emplacements areas and the perimeter waste emplacement must be located on a base drainage control zone with a minimum slope towards the open pit of 1 (vertical):200 (horizontal) and be designed to ensure all seepage from beneath the waste rock emplacement areas and the perimeter waste emplacement is directed towards the open pit.		The waste rock emplacements areas are located on a base drainage control zone with a minimum slope towards the open pit to ensure all seepage from beneath the waste rock emplacement areas is directed towards the open pit. Any seepage from the northern and southern waste emplacement areas is directed to the internal water collection system. All waste emplacement areas have been designed to ensure that runoff and seepage is directed and collected in the site water management ponds for reuse in the process plant or for onsite dust control.	**Compliant Ongoing**
O4.2	The tailings storage facilities and contained water storage facilities must have a basal barrier or impermeable liner with an equivalent permeability of 1x10-9 metres per second over a thickness of 1 metre.	• Letter from Dam Safety Committee re STSF, Jun 2010 • Tailings Storage Facility Surveillance Report, URS, Mar 2012 • Tailings Storage Facility Surveillance Report, URS, Mar 2013 • NTSF Surveillance Report, URS, Dec 2013	The approved design of the tailings storage facilities and contained water storage facilities, have included a basal barrier or impermeable liner that has been the subject of geotechnical reports following construction. Surveillance Reports have been prepared by URS for the Tailings Storage Facilities (TSF) in accordance with the Dams Safety Committee requirements for the High C category TSF. The Construction Report for the Stage 2 lifts of the STSF and NTSF were submitted to the NSW Dam Safety Committee (DSC) and the DSC provided a response in	**Compliant**

<table>
<tr><td></td><td></td><td>• STSF Surveillance Report, URS, Mar 2014</td><td>June 2010 advising that the review satisfies the Committee's requirements.
The NTSF and STSF continue to be assessed annually by Dr Neil Matte of URS to satisfy the requirements of the DSC and annual reports are prepared and sub mitted to the DSC.</td><td></td></tr>
<tr><td>O5</td><td>Other operating conditions</td><td></td><td></td><td></td></tr>
<tr><td>O5.1</td><td>All above ground storage facilities containing flammable and combustible liquids must be bunded in accordance with Australian Standard AS 1940-2004.</td><td></td><td>All above ground storage facilities containing flammable and combustible liquids must be bunded in accordance with Australian Standard AS 1940-2004.</td><td>Compliant</td></tr>
<tr><td>5</td><td>Monitoring and Recording Conditions</td><td></td><td></td><td></td></tr>
<tr><td>M1</td><td>Monitoring records</td><td></td><td></td><td></td></tr>
<tr><td>M1.1</td><td>The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.</td><td>• Environmental Management File 5.09 - Monitoring</td><td></td><td>Noted</td></tr>
<tr><td>M1.2</td><td>All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and c) produced in a legible form to any authorised officer of the EPA who asks to see them.</td><td>• Environmental Management File 5.09 - Monitoring
• EQuIS / RIMS database</td><td>All monitoring data collected by CGP is entered into the Barrick EQuIS database system where the data is retained for reporting and filing. This system also generates reports as required within Barrick and monitoring reports for the EPA/ DECC/OEH, DP&I and DTIRIS.</td><td>Compliant</td></tr>
<tr><td>M1.3</td><td>The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.</td><td>• EQuIS / RIMS database</td><td>All monitoring data collected by CGM to meet the requirements of the EPL is entered into the Barrick EQIS computerised database and includes all information required by this condition.</td><td>Compliant</td></tr>
<tr><td>M2</td><td>Requirement to monitor concentration of pollutants discharged</td><td></td><td></td><td></td></tr>
<tr><td>M2.1</td><td>For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:</td><td></td><td></td><td>Noted</td></tr>
<tr><td>M2.2</td><td>Air Monitoring Requirements</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Point 1,2,3,4,5
<table>
<tr><th>Pollutant</th><th>Unit of Measure</th><th>Frequency</th><th>Sampling Method</th></tr>
<tr><td>Aluminium</td><td>mg/kg</td><td>Every 6 mths</td><td>Rep. sample</td></tr>
<tr><td>Arsenic</td><td>mg/kg</td><td>Every 6 mths</td><td>Rep. sample</td></tr>
</table></td><td>• Monthly Weather Reports, Apr 2013 to May 2014, Sentinel Pty Ltd
• Monthly Weather Reports, Jun 2014 to May 2015, Sentinel Pty Ltd</td><td>All monitoring conducted by CGM is undertaken in compliance with the requirements of the EPL. All sampling occurs in accordance with the frequency specified in EPL condition M2.1 using standard methods and analysis is conducted by NATA registered laboratories.</td><td></td></tr>
</table>

	Cadmium	mg/kg	Every 6 mths	Rep. sample
	Copper	mg/kg	Every 6 mths	Rep. sample
	Lead	mg/kg	Every 6 mths	Rep. sample
	Particulates – Deposited Matter	g/m^2/month	Monthly	AM-19
	Selenium	mg/kg	Every 6 mths	Rep. sample
	Zinc	mg/kg	Every 6 mths	Rep. sample

Monitoring data and results are reported in the AEMR and EPA Annual Return.

Point 6

Pollutant	Unit of Measure	Frequency	Sampling Method
Aluminium	mg/kg	Every 6 mths	Rep. sample
Arsenic	mg/kg	Every 6 mths	Rep. sample
Cadmium	mg/kg	Every 6 mths	Rep. sample
Copper	mg/kg	Every 6 mths	Rep. sample
Lead	mg/kg	Every 6 mths	Rep. sample
Particulates – Deposited Matter	g/m^2/month	Monthly	AM-19
Selenium	mg/kg	Every 6 mths	Rep. sample
Total suspended Particles	$\mu g/m^3$	6 days	AM-18
Zinc	mg/kg	Every 6 mths	Rep. sample

M2.3 **Water and/ or Land Monitoring Requirements**

POINTS 12,13

Pollutant	Units	Frequency	Sampling Method
Conductivity	µS/cm	Monthly	In situ
Total suspended particles	mg/l	Quarterly	Representative sample
pH	pH units	Monthly	In situ

POINTS 14,15,16,17,18

Pollutant	Units	Frequency	Sampling Method
Alkalinity (as $CaCO_3$)	mg/l	Quarterly	Representative sample
Antimony			

- Site Water Management Plan, 2013

Surface water monitoring occurred following EPL trigger (i.e. >20mm rainfall/24hrs) for the surface water monitoring program during May 2011 and April 2013.

2 June 2013	26.6mm
12 June 2013	23.8mm
17 September 2013	54.4mm
1 March 2014	26.6mm

Arsenic Cadmium			
Conductivity	µS/cm	Monthly	In situ
Copper Lead Mercury Selenium	mg/l	Quarterly	Representative sample
Total suspended particles Zinc	mg/l	Quarterly	Representative sample
pH	pH units	Monthly	In situ

POINTS 19,20,21,22,23,24,25,30,31,32,33,44,45

Pollutant	Units	Frequency	Sampling Method
Alkalinity (as $CaCO_3$) Antimony Arsenic Cadmium Calcium Chloride	mg/l	Quarterly	Representative sample
Conductivity	µS/cm	Monthly	In situ
Copper	mg/l	Quarterly	Representative sample
Cyanide (weak acid dissociable)	mg/l	Quarterly	WAD cyanide from water samples - CN-1 recovery by 20th Ed APHA 4500-CN-1 method Alternative method and analysis by 20th Ed. APHA 4500-CN-1 method E, D or F
Lead Magnesium Potassium Selenium Sodium	mg/l	Quarterly	Representative sample
Standing water level	metres	Monthly	In situ
Sulfate Total Hardness	mg/l	Quarterly	Representative sample

Total suspended particles Zinc			
pH	pH units	Monthly	In situ

POINTS 34,36,38,40, 41,42,43

Pollutant	Units	Frequency	Sampling Method
Alkalinity (as $CaCO_3$) Antimony Arsenic Cadmium Calcium Chloride	mg/l	Quarterly	Representative sample
Conductivity	µS/cm	Monthly	In situ
Copper Lead Magnesium Potassium Selenium Sodium	mg/l	Quarterly	Representative sample
Standing water level	metres	Monthly	In situ
Sulfate Total Hardness Total suspended particles Zinc	mg/l	Quarterly	Representative sample
pH	pH units	Monthly	In situ

POINT 48

Pollutant	Units	Frequency	Sampling Method
Cyanide (total)	mg/l	Weekly	Total cyanide from water samples CN-1 recovery by 20th Ed APHA 4500-CN-1 method B3.I. Alternative method and analysis by 20th Ed APHA 4500 - CN-1 method E, D or F
Cyanide (weak acid dissociable)	mg/l	2x daily during discharge	WAD cyanide from water samples CN-1 recovery

				by 20th Ed. APHA 4500-CN-1 method Alternative method and analysis by 20th Ed. APHA 4500-CN-1 method E, D or F			
M2.4	*For the purposes of the table(s) above* *• Special Frequency 1 means the collection of samples weekly and following rainfall events of 20mm or greater in a 24 hour period.* *• At Monitoring Points 14, 15, 16, 17, and 18, monitoring is not required when the monitoring site is dry or if the water level of Lake Cowal is at or below 204.5 metres Australian Height Datum.* *• At Monitoring Points 34, 36, 38 and 40, monitoring is not required where a piezometer is lost or destroyed as a result of mine growth.* *• At Monitoring Point 3 (dust gauge DG5), monitoring is not required when the water level in Lake Cowal is below 204.5 metres Australian Height Datum and/or when the monitoring site is unable to be accessed safely. Monitoring is required to recommence when the outcome of a risk assessment determines a low or acceptable risk is associated with accessing the monitoring site.*		• Weekly Cowal Mine surveyor m AHD level readings for Lake Cowal (whilst water is across ML1535 boundary fence). • EPL Variation: 21 May 2014 Notice Number 1522063 • EPL Variation: 24 July 2014 Notice Number 1523564. • EPL Variation: 10 Oct 2014 Notice Number 152458.	The surface water monitoring program has occurred with collection of water samples along transects in the Surface Water, Groundwater, Meteorological and Biological Monitoring Program when the water levels in Lake Cowal have been above 204.5 m AHD. EPL11912 was varied on 21 May 2014 to align condition M2.4 for Points 14, 15, 16, 17 and 18 to Lake level of 204.5 m AHD. Where practical Barrick has continued to take surface water samples below 204.5 m AHD.	**Compliant**
M3	**Testing methods - concentration limits**						
M3.1	Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with: (a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or (b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or (c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.		• Approved Methods for the Sampling and Analysis of Air Pollutants in NSW • Interpretation and Discussion of 2012 Air Quality Monitoring Results, Prof Stephen Cattle, University of Sydney, 12 Apr 2013 • Interpretation and Discussion of 2013 Air Quality Monitoring Results, Prof Stephen Cattle, Uni of Sydney, 31 May 2014	Analysis of dust deposition samples has been carried out by Australian Laboratory Services (ALS) and in 2012-2013 by , a NATA registered laboratory for analysis of all the parameters required to be tested by CGM to meet the regulatory requirements. Ecowise Environmental Pty Ltd supply a high volume air sampler for the TSP program and ALS conduct the analysis of the collected dust using ICP-MS for metals for the CGM. Dust data id reviewed annually by Dr Stephen Cattle of University of Sydney. The results of the monitoring and dust analysis program are reported in the AEMR and EPA Annual Report.	**Compliant**
M3.2	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA before any tests are conducted.			Analysis of water samples collected by CGM is conducted by NATA registered Australian Laboratory Services (ALS), using approved methods for analysis of the parameters required to be tested by the CGM to meet regulatory requirements.	**Compliant**
M4	**Weather Monitoring**				

<table>
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<td>For each monitoring point specified in the table below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.</td>
<td>• Download/Calibration of the Automatic Weather Station, Sentinel April 2010 to Jan 2012
• Monthly Weather Station Reports – Jan 2010 to May 2015, Sentinel P/L
• Cowal Calibration Report, Sentinel Pty Ltd, 21 Mar 2014
• Cowal Calibration Report, Sentinel Pty Ltd, 13 Jun 2014
• Cowal Calibration Report, Sentinel Pty Ltd, 23 Jan 2015
• Cowal Calibration Report, Sentinel Pty Ltd, 23 Apr 2015</td>
<td>The meteorological station installed at CGM is equipped with the required instrumentation to provide 15minute continuous data to the CGM site for the parameters in EPL condition M4.
Data is downloaded and reported monthly to CGM by Sentinel.
Calibration of the meteorological station equipment occurs quarterly by Sentinel Pty Ltd.</td>
<td>Compliant</td>
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<td></td>
<td>Point 7
<table>
<tr><th>Parameter</th><th>Units</th><th>Continuous Averaging Period</th><th>Method</th></tr>
<tr><td>Rainfall</td><td>mm</td><td>24hr</td><td rowspan="2">AM-4</td></tr>
<tr><td>Temperature @ 2m</td><td></td><td rowspan="6">15min</td></tr>
<tr><td>Temperature @ 10m</td><td></td><td>AM-2 & AM-4</td></tr>
<tr><td>Wind speed @ 10m</td><td>m/s</td><td>AM-2 & AM-4</td></tr>
<tr><td>Wind direction @ 10m</td><td>o</td><td>AM-2 & AM-4</td></tr>
<tr><td>Sigma theta @ 10m</td><td>o</td><td>AM-2 & AM-4</td></tr>
<tr><td>Solar radiation</td><td>W/m^2</td><td>AM-4</td></tr>
<tr><td>Siting</td><td colspan="2"></td><td>AM-1 &AM-4</td></tr>
<tr><td>Measurement</td><td colspan="2"></td><td>AM-2 & AM-4</td></tr>
</table></td>
<td></td>
<td>The meteorological station installed at CGM is equipped with the required instrumentation for the parameters in EPL condition M4, to provide 15minute continuous data to the CGM site .</td>
<td>Compliant</td>
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<td>M5</td>
<td>Recording of pollution complaints</td>
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<td>M5.1</td>
<td>The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.</td>
<td>• Responsibility Information Management System (RIMS)</td>
<td>A complaints register, including responses to complainants, is maintained by Barrick in accordance with the condition. A summary of the complaints is provided in the AEMR and the EPL Annual Environment Report.</td>
<td>Compliant</td>
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<td>M5.2</td>
<td>The record must include details of the following:
(a) the date and time of the complaint;
(b) the method by which the complaint was made;
(c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
(d) the nature of the complaint;
(e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
(f) if no action was taken by the licensee, the reasons why no action was taken.</td>
<td>• Letters to DoP/DP&I, DPI/DII, DECC/OEH , BSC and CEMCC re Complaints Register:
○ Jan to Jul 2013
○ Jul to Dec 2013
○ Jan to Jul 2013
○ Monthly Reporting on website</td>
<td>Complaints are recorded in the CGM Complaints register and include information in accordance with each of the requirements of this condition. A summary of the Complaints was submitted to the relevant authorities each 6 months until MOD11 and a full summary included in the AEMR (Annual Review report) each year. As per MOD11, a Complaints Register is now posted at Barrick (Cowal) Operations www. Complaints are still discussed quarterly at Cowal CEMCC meetings.</td>
<td>Compliant</td>
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M5.3	The record of a complaint must be kept for at least 4 years after the complaint was made.		All complaints received by Barrick are retained on the site computer system Complaints Register.	**Compliant**
M5.4	The record must be produced to any authorised officer of the EPA who asks to see them.			**Noted**
M6	**Telephone complaints line**	•		
M6.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.	• Responsibility Information Management System (RIMS) • Letters to DECC/OEH re Complaints Register: o Jan and Jul 2013 o Jan to May 2014	(a)A 24hour complaints line (02) 6975 3454 for CGM was established in 2003. CGM uses the External Communications component of RIMS to track public complaints. (b)Six monthly reports of complaints received by CGM are prepared and submitted to OEH/BSC/DI&I/CEMCC and DP&I	**Compliant**
M6.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.		The complaints line is advertised in the West Wyalong Advocate on a regular basis and is available on the CGM community newsletters**.**	**Compliant**
M6.3	Conditions M6.1 and M6.2 do not apply until 3 months after: (a) the date of the issue of this licence or (b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10.			**Noted**
M7	**Blasting monitoring**			
M7.1	To determine compliance with condition(s) L7.1, L7.2, L7.3 and L7.4: a) Airblast overpressure and ground vibration levels must be measured at nearby residences labelled as "BM01", "BM02" and "BM03", at bird breeding areas labelled as "BM04" and "BM05", and at the general monitoring site "BM06" in Figure 2 'Blast Monitoring Locations' of the revised "Cowal Gold Project Blast Management Plan" received by DECCW on the 01.06.2010 and on DECCW file LIC07/2610-08 for all blasts carried out in or on the premises; and b) Instrumentation used to measure the air-blast overpressure and ground vibration levels must meet the requirements of Australian Standard AS 2187.2-2006. (c) Monitoring at blast monitors BM01, BM04.1, BM05 and BM09 is not required when the water level in Lake Cowal is below 204.5 metres Australian Height Datum and/or when the monitoring site is unable to be accessed safely. Monitoring is required to recommence when the outcome of a risk assessment determines a low or acceptable risk is associated with accessing the monitoring site	• Blast Management Plan August 2003 • Review of Blast Monitoring Report 2012, The Saros Group, Mar 2013 • Review of Blast Monitoring Report 2013, The Saros Group, Mar 2014	(a) All blasts were monitored for overpressure and vibration at the following fixed locations, with one mobile/portable monitor available for random checks. Blast monitoring locations are: o BM01 - Gumbelah residence and BM03 - Coniston Residence are categorised as 'residence *on privately owned land*' . o BM02, BM04.1, BM05, BM06 and BM09 are positioned to assess the impacts on and around Lake Cowal. o BM07 – Administration and BM10 Near Field Monitor in the Blast Management Plan. (b) Blast monitoring equipment undergoes maintenance and annual calibration in February/March by the Saros Group.	**Compliant**
	Reporting Conditions			

R1	Annual return documents			
R1.1	**What documents must an Annual Return contain?** The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: (a) a Statement of Compliance; and (b) a Monitoring and Complaints Summary. Before the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	• Annual Return to EPA 23 Dec 2011to 22 Dec 2012, submitted 20 Feb 2013 • Annual Return to EPA 23 Dec 2012 to 22 Dec 2013, submitted 17 Feb 2014 • Annual Return to EPA 23 Dec 2013 to 22 Dec 2014	(a) The Annual Returns have been prepared by CGM on the approved EPA forms by CGM and submitted to the EPA /OEH in accordance with condition R1.1 complete with a Statement of Compliance. (b) The Monitoring and Complaints summaries have been included with the Annual Returns.	**Compliant**
R1.2	**Period covered by Annual Return** An Annual Return must be prepared in respect of each reporting period, except as provided below. Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.	• Annual Return to EPA 23 Dec 2011to 22 Dec 2013, submitted 17 Feb 2014 • Annual Return to EPA 23 Dec 2013 to 22 Dec 2014, submitted to EPA 23 Feb 2015	The Annual Returns for CGP cover the period of 23 December to 22 December in accordance with EPL condition R1.2. The Annual Return for 23 December 2013 to 22 December 2014 was submitted to the EPA on 4 March 2015 complete with the monitoring and complaints summary, in accordance with EPL condition R1.2.	**Compliant**
R1.5	**Deadline for Annual Return** The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').		The Annual Returns for the CGM for the period 23 December to 22 December have been submitted to the EPA/ OEH in accordance with the requirement of EPL condition R1.5 for 2010 to 2012.	**Compliant**
R1.7	**Licensee must retain copy of Annual Return** The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was supplied to the EPA.		A copy of each Annual Return is retained within the Barrick document system in the DECCW-EPA/OEH file.	**Compliant**
R1.8	**Certifying of Statement of Compliance and Signing of Monitoring and Complaints Summary** Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by: (a) the licence holder; or (b) by a person approved in writing by the EPA to sign on behalf of the licence holder.		The 2012 and 2013 Annual Returns were completed and certified by senior Barrick Managers as required by EPL R.18.	**Compliant**
R1.9	The licensee must report any exceedance of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedance becomes known to the licensee or to one of the licensee's employees or agents. *Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.* *Note: An application to transfer a licence must be made in the*		Any exceedance of the blasting limits is reported to the regional office of the EPA as soon as practicable after the exceedance is known to have occurred.	**Noted**

	approved form for this purpose.			
R2	**Notification of environmental harm**			
R2.1	*Note: The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with Part 5.7 of the Act.* *Notifications must be made by telephoning the EPA's Pollution Line service on 131 555.*		No notifiable incidents were reported by CGM to have occurred between May 2013 and May 2014.	**Noted**
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	• Letter from EPA re New Requirements for All Licensees, 16 Jan 2012 • Pollution Incident Response Management Plan (PIRMP) submitted to the EPA in Sep 2012 • PIRMP placed on website Feb 2014	Changes to the environment protection legislation in relation to notification of pollution incidents, was advised to Barrick on 16 January 2012. The changes required the preparation of a Pollution Incident Response Management Plan. The Plan was submitted to the EPA in September 2012.	**Noted**
Written report				
R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that: (a) where this licence applies to premises, an event has occurred at the premises; or (b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.		Not triggered	**Noted**
R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.		Not triggered	**Noted**
R3.3	The request may require a report which includes any or all of the following information: (a) the cause, time and duration of the event; (b) the type, volume and concentration of every pollutant discharged as a result of the event; (c) name, address, business hours telephone, number of employees or agents of the licensee, or a specified class who witnessed the event; (d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who		Not triggered	**Noted**

	witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; (e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; (f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; (g) any other relevant matters.			
R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.		Not triggered	**Noted**
R4.2	The licensee must report any exceedance of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedance becomes known to the licensee or to one of the licensee's employees or agents.	•	**Reporting of blasting monitoring**	**Compliant**
7	**General conditions**			
G1	**Copy of licence kept at the premises**			
G1.1	A copy of this licence must be kept at the premises to which the licence applies.		A copy of the EPL is kept in the Environment Section at the Cowal Gold Project site administration offices and workplace copies are in Crib Rooms and Office areas.	**Compliant**
G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it.			**Noted**
G1.3	The licence must be available for inspection by any employee or agent working at the premises.			**Noted**

ATTACHMENT C MINING LEASE 1535 CONDITIONS

Attachment C Mining Lease 1535 Conditions

No.	ML 1535 Condition	Audit Evidence	Comments	Compliance
1	**Notice to Landholders**			
	The lease-holder must serve on each landholder of the land a notice in writing indicating that this lease has been granted / renewed and whether the lease includes the surface.		Barrick is the registered proprietor of all the land on which the mining lease is located.	**Not applicable**
6	**Reports**			
	The lease holder shall provide within a period of 28 days after each anniversary of the date this lease has effect …. a progress report to the satisfaction of D-G……..		Progress Reports have been prepared for submission to DPI/DTIRIS-DRE annually and also submits the AEMR as required under MCoA 9.2.	**Compliant**
11	**Safety**			
	Operations are to be carried out in a manner that ensures safety of persons or stock in the vicinity of the operations…….		Protective fences have been constructed around the active mine areas, tailing storage facilities, process plant, and the mine lease boundary to restrict entry of persons and stock.	**Compliant**
12	**Rehabilitation**			
	Land disturbed must be rehabilitated to a stable and permanent form suitable for a subsequent land use acceptable to the Director-General and in accordance with the Mining Operations Plan……	• MOP Jan 2011 to Sep 2012 • Letter from DTIRIS re MOP Oct 2012 to Jan 2014, 19 Dec 2012 • MOP Oct 2012 to Jan 2014 • Letter to DT&I- DRE re Extension of MOP to 31 Jan 2015, 27 Sep 2013 • Letter from DT&I-DRE re Approval of MOP Extension, 4 Oct 2013 • MOP (revised) 31 January 2014 to 31 January 2015 • MOP (draft) Apr 2014 to Apr 2016, dated Apr 2014 • Letter from DRE re Approval of MOP Apr 2014 to Apr 2016, 9 Oct 2014	The proposed rehabilitation activities during each MOP term are described in section 4 of the MOP's. The MOP October 2012 to January 2014 was approved by the DTIRIS-DRE on 19 December 2012. Barrick requested an extension to the MOP to 31 January 2015 to align with the resubmission of the Modification before DP&I to include rehabilitation of: • Fourth lifts to the NTSF and STSF; • Eastern and southern outer batters slopes and Shaping and rehabilitation of northern section of the Southern Waste Rock Emplacement; • Remaining areas along the upper outer slopes of the Perimeter Waste Rock Emplacement; • Preparation and implementation of rehabilitation trial areas on the outer northern slops of the Northern Waste Rock Emplacement.	**Compliant**
13	The lease holder must comply with any direction given by the D-G regarding the stabilisation and revegetation of any mine residues, tailing or overburden dumps situated on the lease area.			**Noted**
14	**Prevention of Soil Erosion and Pollution**			
	Operations must be carried out in a manner that does not cause or aggravate air pollution, water pollution (including sedimentation) or soil contamination or erosion unless otherwise authorised by a relevant approval and in	• Erosion and Sediment Control Management Plan, revised Dec 2009 • Dust Management Plan, revised Feb 2009	The operations were observed as being undertaken in accordance with the Erosion and Sediment Control Management Plan and other environmental management plans, Mining Operations Plan and Addenda.	**Compliant**

No.	ML 1535 Condition	Audit Evidence	Comments	Compliance
	accordance with the Mining Operations Plan……	• Erosion and Sediment Control Management Plan (revised) submitted to DP&E 24 Feb 2015 • Air Quality Management Plan, revised submitted to DP&E 20 Apr 2015		
15	**Transmission lines, Communication lines and Pipelines**			
	Operations must not interfere with or impair the stability or efficiency of any transmission line, communications line or pipeline or other utility on the area ……		Relocation of Telstra cables and power lines within the ML boundary occurred during construction in the 1st quarter of 2004.	**Compliant**
16	**Fences and gates**			
	(a) Activities on the lease must not interfere with or damage fences without the prior written approval of the owner …..		Barrick is the registered proprietor of the all land on which the mining lease is located.	**Not applicable**
17	**Roads and Tracks**			
	Operations must not affect any road unless in accordance with an accepted Mining Operations Plan or with the prior approval of the Director-General…… The lease holder must pay the local council, DLWC or the RTA the cost incurred in fixing any damage to roads caused by the operations carried out under this lease……		The external road access route to the CGM site from West Wyalong as approved in the Development Consent, is complete and in use for all traffic to and from the mine site.	**Compliant**
18	Access tracks must be kept to a minimum and be positioned so that they do not cause any unnecessary damage to the land……		Access tracks within the mining lease area have been established in accordance with the mine plan development and any temporary access tracks are rehabilitated when they are no longer required.	**Noted**
19	**Trees and Timber**			
	The lease holder must not cut, destroy, ringbark or remove any timber or other vegetative cover on the lease except such as directly obstructs or prevents the carrying out of operations…..	• Vegetation Clearance Protocol Nov 2008 • Letter from DoP re Inland Greybox Woodland, 10 Aug 2007 • Letter from DECC re Inland Greybox Woodland, 27 Aug 2007 • Letter from DECC re Myall Woodland, 29 Aug 2007	Barrick is retaining any trees within the mining lease not in the path of the project development. Approval to remove any trees or vegetative cover within the mining lease area is obtained from the Environmental Manager prior to removal of any vegetation. DECC, DPI and DoP accepted the implementation of the Vegetation Clearance Protocols related to the Inland Grey Box Woodland, dated 9 August 2007, and Myall Woodland dated 20 August 2007.	**Compliant**
24	**Mine Safety Plan**			
	Prior to commencement of any construction activities on the lease area and as required by the Director-General the lease holder must prepare a Mine Safety Plan to ensure the Mine Safety General Rule 2000 is adhered to.	• CGM Mine Safety Plan, Jun 2009 • Letter from DoP re Revised CGM Mine Safety Plan, 18 Jun 2009	The Safety Management System for CGM was approved on 14 December 2005 and a major review of the Safety Management System was conducted by Barrick in February 2007 and the Safety Management System updated and approved on 18 June 2009. No further updates to the Safety Management System occurred between May 2010 and April 2013.	**Compliant**
25	Mining Rehabilitation, Environmental Management Process (MREMP) Mining Operations Plan (MOP)	• Letter from D&I re MOP Jan 2011 - Sep 2012, 30 Mar 2011	An annual meeting is held of the Mining, Rehabilitation and Environmental Management Process Committee (MREMP) to discuss the Annual Environmental Management Report (AEMR).	**Compliant**

No.	ML 1535 Condition	Audit Evidence	Comments	Compliance
		• MOP Jan 2011-Sep 2012 • Letter to DTIRIS re Variation to MOP, 5 Apr 2012 • Letter from DTI-DRE re Approval of Variation to MOP, 14 May 2012 • MOP Oct 2012-Jan 2014 • Letter from DTI-DRE re Approval of MOP for Oct 2012 to Jan 2014, 19 Dec 2012 • Letter to DT&I- DRE re Extension of MOP to 31 Jan 2015, 27 Sep 2013 • Letter from DT&I-DRE re Approval of MOP Extension, 4 Oct 2013 • MOP (revised) 31 January 2014 to 31 January 2015 • MOP (draft) Apr 2014 to 2016, dated Apr 2014 • Letter from DRE re Approval of MOP Apr 2014 to Apr 2016, 9 Oct 2014	The participants include DPI (Minerals), DECC, DWE, Councils, and Dam Safety Committee representatives. Mining Operations Plans for the CGM operations have been prepared and approved by Division of Resources and Energy during the 2013 to 2014 period.	
	(1) Mining operations, including mining purposes, must be conducted in accordance with the MOP satisfactory to the Director-General……		An extension of the 2009-2010 MOP until 31 March 2011 was granted by DI&I on 23 November 2010. A MOP for January 2011 to September 2012 was submitted to DI&I and accepted on 30 March 2011. A Variation to the MOP was requested in a letter to DTIRIS on 5 April 2012 for the Southern Tailings Storage Facility (fourth lift), temporary isolation bund by 0.5m to provide for future lake filling events and the Northern Waste Rock Emplacement (storage volume elevation increase). Response from DTIRIS approved the STSF fourth lift but not the increase in height of the Northern Waste Rock Emplacement. The October 2012 to January 2014 MOP was and approved by the DTIRIS-DRE on 19 December 2012. Barrick requested an extension to the MOP to 31 January 2015 to align with the resubmission of the Modification before DP&I. A draft MOP for April 2014 to April 2016 has been prepared by Barrick for submission to DRE.	**Compliant**
	(2) An Initial Mining Operations Plan must be submitted prior to commencement of construction on the site ……..	• Initial Mining Operations Plan Cowal Gold Project Mar 2004	The Initial Mining Operations Plan was submitted to DMR prior to commencement of construction of the mine on the CGP site.	**Compliant**
26	**Annual Environmental Management Report (AEMR)**			
	(1) Within 12 of the commencement of mining operations and thereafter annually ….. the lease holder must lodge an AEMR with the Director-General.	• 2009 AEMR, April 2010 • 2010 AEMR, April 2011 • 2011 AEMR, April 2012 • 2012 AEMR April 2013 • 2013 AEMR (draft)	The AEMR's for the CGP have been prepared in accordance with the agency Guidelines. A presentation of the AEMR has been provided to the relevant government authorities each year.	**Compliant**
27	**Blasting**			
	(a) Ground Vibration The lease holder must ensure that ground vibration peak particle velocity generated by any blasting within the lease area does not exceed 10mm/sec and does not exceed 5mm/sec in more than 5% of the total number of blasts over a period of 12 months at any dwelling or occupied premises, not owned by the lease holder or a related corporation, unless determined otherwise by the EPA.	• Blast Management Plan 2009 • Review of Blast Monitoring Report 2013, The Saros Group, Mar 2014 • Blast Monthly Monitoring Reports, January, February and March 2014	Blast overpressure and vibration monitoring has demonstrated compliance of all blasts with the Day and Evening criteria specified in the MCoA/EPL/ML conditions. Exceedence of the 95dB(L) criteria (Development Consent condition 6.3(a)) occurred from ten (10) blasts on Sundays and public Holidays between January 2013 and March 2014. The ten (10) blast results greater than 95dB (Lin peak) overpressure criteria between May 2014 and April 2015, was less than 5% of the total blasts.	**Compliant**

No.	ML 1535 Condition	Audit Evidence	Comments	Compliance
	(b) Blast Overpressure The lease holder must ensure that the blast overpressure noise level generated by any blasting within the lease area does not exceed 120dB (linear) and does not exceed 115 db(linear) in more than 5% of the total number of blasts over a period of 12 months, at any dwelling or occupied premises, not owned by the lease holder or a related corporation, unless determined otherwise by the EPA.		The total number of blast results between May 2013 and May 2014 indicated that less than 5% of the blasts exceeded the 115dB (Lin peak) overpressure criteria for the 12 month period.	**Compliant**
28	**Use of Cyanide**			
	The lease holder must not use cyanide or any solution containing cyanide for the recovery of minerals on the lease area without the prior written approval of the Minister and subject to any conditions he may stipulate.	• Letter from DPI re Approval of Cyanide Use on Mining Lease 1535, Cowal Gold Mine, 17 Jan 2006	Letter of approval received from DPI in January 2006 for use of cyanide in the CGP process plant.	**Compliant**
29	**Control of Operations**			
	(a) If an Environmental Officer of the DMW believes that the lease holder is not complying with any provision of the Act or any condition of this lease relating to the working of the lease, he may direct the lease holder to: (i) cease working the lease; (ii) cease that part of the operation not complying with the Act or conditions; Until in the opinion of the Environmental Officer the situation is rectified. The lease holder must comply with any written direction given. The Director-General may confirm, vary or revoke any such direction. A written direction referred to in this condition may be served on the Mine Manager.			**Noted**