



Photograph courtesy of Bronwyn Flynn

# INDEPENDENT ENVIRONMENTAL AUDIT COWAL GOLD MINE

---

**May 2014**

This Independent Environmental Audit was conducted to satisfy the requirement of condition 8.8 in the Project Approval granted for the Cowal Gold Project by the Minister for Planning on 26 February 1998.





## Cowal Gold Mine

# Independent Environmental Audit 28 April to 31 May 2014

Prepared for:  
**Barrick (Cowal) Limited**  
**Cowal Gold Mine**  
Clear Ridge Road  
West Wyalong NSW 2671 Australia

Report prepared by:  
trevor brown & associates  
applied environmental management consultants

ABN: 65 850 181 279

aemc Ref: BAR14/05

trevor brown & associates – applied environmental management consultants  
42 Skiff Street Vincentia NSW Australia 2540  
Mob: +61 2 409 503 031 Tel: 61 2 4443 0058  
[tebrown@bigpond.com](mailto:tebrown@bigpond.com)

## DISTRIBUTION

Copies	Recipient	Copies	Recipient
12	Barrick (Cowel) Limited		

This document was prepared for the sole use of Barrick Australia Pty Limited and the regulatory agencies that are directly involved with this project, are the only intended beneficiaries of our work. No other party should rely on the information contained herein without the prior written consent of Trevor Brown & Associates.

by

**Trevor Brown & Associates**

ABN: 65 850 181 279

42 Skiff Street Vincentia NSW Australia 2540



22 June 2014

**Trevor Brown**  
Principal Environmental Consultant

## TABLE OF CONTENTS

<b>Executive Summary .....</b>	<b>1</b>
<b>TABLE OF CONTENTS .....</b>	<b>iii</b>
<b>1.0 Introduction .....</b>	<b>5</b>
1.1 Background .....	5
1.2 Scope of Work .....	5
1.3 Structure of the Audit Report .....	5
1.4 Compliance Tables .....	6
<b>2. Project status .....</b>	<b>7</b>
2.1 Mine Development May 2013 to May 2014 .....	9
<b>3.0 Project Environmental Approvals .....</b>	<b>12</b>
3.1 Development Consent 14/98 .....	12
3.2 Environment Protection Licence No. 11912 .....	13
3.3 Mining Lease ML1535 .....	14
3.4 Environmental Management System .....	14
<b>4. Minister's Conditions of Approval .....</b>	<b>15</b>
4.1 Environmental Management Plans .....	15
4.2 Heritage Management .....	16
4.2.1 Heritage Management Plan .....	16
4.2.2 Indigenous Archaeology and Cultural Heritage Management Plan .....	17
4.2.3 Conclusion .....	20
4.3 Flora and Fauna Management .....	20
4.3.1 Flora and Fauna Management Plan .....	20
4.3.2 Flora and Fauna Monitoring .....	28
4.3.3 Conclusion .....	30
4.4 Erosion and Sediment Control Management .....	30
4.4.1 Erosion and Sediment Control Management Plan .....	30
4.4.2 Erosion and Sediment Control Performance .....	32
4.4.3 Conclusion .....	33
4.5 Soil Stripping Management .....	33
4.5.1 Soil Stripping Management Plan .....	33
4.5.2 Soil Stripping Activity .....	36
4.5.3 Conclusion .....	36
4.6 Rehabilitation and Offset Areas .....	37
4.6.1 Rehabilitation and Offset Management Plan .....	37
4.6.2 Rehabilitation .....	40
4.6.4 Rehabilitation Monitoring .....	42
4.6.5 Conclusion .....	44
4.7 Bushfire Management .....	44
4.7.1 Bushfire Management Plan .....	44
4.7.2 Conclusion .....	46
4.8 Land Management .....	47
4.8.1 Land Management Plan .....	47

4.8.3	Remnant Vegetation Enhancement Program .....	50
4.8.4	Conclusion .....	51
4.9	Compensatory Wetland Management.....	51
4.9.1	Compensatory Wetland Management Plan .....	51
4.9.2	Compensatory Wetland Area Surveys.....	53
4.9.3	Conclusion .....	54
4.10	Water Management.....	54
4.10.1	Site Water Management Plan .....	54
4.10.2	Water Monitoring and Water Balance Performance .....	62
4.10.3	Conclusion .....	63
4.11	Cyanide Management .....	64
3.11.1	Cyanide Management Plan.....	64
4.11.2	Cyanide Monitoring .....	69
4.11.3	Conclusion .....	69
4.12	Hazardous Waste and Chemical Management .....	69
4.12.1	Hazardous Waste and Chemical Management Plan .....	69
4.12.2	Hazardous Waste and Chemical Management Performance .....	70
4.12.3	Conclusion .....	70
4.13	Dust Management .....	71
4.13.1	Dust Management Plan .....	71
3.13.2	Dust Monitoring .....	72
4.13.3	Conclusions .....	73
4.14	Blast Management .....	74
4.14.1	Blast Management Plan .....	74
4.14.2	Blast Monitoring .....	75
4.14.3	Conclusion .....	76
4.15	Noise Management .....	77
4.15.1	Noise Management Plan.....	77
3.15.2	Noise Monitoring .....	78
3.15.3	Conclusions .....	79
4.16	Traffic Noise Management .....	79
3.16.1	Traffic Noise Management Plan .....	79
3.16.2	Traffic Noise Monitoring Results .....	80
4.16.3	Conclusion .....	81
4.17	Community Complaints .....	81
4.17.1	Complaints Procedure .....	81
4.17.2	Conclusion .....	82
4.18	Independent Monitoring Panel .....	82
4.18.2	Conclusion .....	85
<b>5.</b>	<b>Conclusion.....</b>	<b>86</b>
	<b>Glossary of Terms .....</b>	<b>87</b>
<b>Attachment A</b>	<b>Minister's Conditions of Approval</b>	<b>i</b>
<b>Attachment B</b>	<b>Environment Protection Licence 11912</b>	<b>A</b>
<b>Attachment C</b>	<b>Mining Lease 1535</b>	<b>I</b>

## EXECUTIVE SUMMARY

An independent environmental audit of the Cowal Gold Mine (CGM) was conducted between the 28 April and 2 May 2014 by Trevor Brown Principal Environmental Management Auditor of Trevor Brown & Associates,, to assess the status of the CGM operations in accordance with the Minister's Conditions of Approval (MCoA) 8.8(a). The audit reviewed the status of compliance of the CGM operations from 1 May 2013 to 1 May 2014.

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 MCoA and other statutory environmental approvals.

### Environmental Management Plans

All EMP's were reviewed in 2008-2009 and revised as necessary (in accordance with MCoA 3.2(a)). Revisions of the Management Plans were submitted to DoP/DP&I. Some of the revised management plans were still awaiting approval by DP&I at the date of this audit (i.e. 28 April 2013 to 31 May 2014).

The latest revision of the EMP's that address the requirements of the latest modifications to the Development Consent (i.e. MOD 10), are being implemented by Barrick for the management of the CGM operations although they had not been officially approved by DP&I at the date of this audit.

### Heritage

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 was approved via Development Consent MOD 9 March 2010. Demolition of the homestead 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 from any areas prior to disturbance 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, provides an adequate basis for the management of flora and fauna on the CGM 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.

### Erosion and Sediment Control

The erosion and sediment control strategies implemented for the CGM project site in accordance with the Erosion and Sediment Control Plan are considered to be effective in meeting the objectives of the 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

### **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.

Rehabilitation trials on the CGM site have also continued to determine suitable substrates and procedures for the stabilisation and revegetation. The rehabilitation trials have exhibited variability of results of vegetative establishment on the blends of rock, subsoil, gypsum and mulches, and the results of the trials have also been affected by the weather conditions experienced during the 2010 to May 2014 period. The rehabilitation targets outlined in the MOP and reported in the AEMR's have generally not been met due to the influence of the extreme weather conditions on the establishment and succession of growth, however improvement was noted during this audit with the activities undertaken between May 2013 and May 2014 increasing the area of reshaped land where disturbance has been completed and the revegetation of these areas commenced to address the rehabilitation targets in the MOP.

### **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 are (e.g. Flora and Fauna Management Plan, Remnant Vegetation Enhancement Program, Rehabilitation and Offset Management Plan, Compensatory Wetland Management Plan etc).

### **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.

### **Bushfire**

The Bushfire Management Plan provides a sound basis for the management of CGM MLA and Barrick owned land in relation to control of vegetation fuel sources and firefighting 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.

### **Water Management**

The Site Water Management Plan provides an adequate program for the management of water use by the CGM project and is controlling the surface water runoff from the disturbed areas of the CGM site that protecting the water quality in Lake Cowal. A revised Site Water Management Plan was lodged with DP&I on 17 February 2012 and August 2013. Barrick was still awaiting approval of the revised Site Water Management Plan from DP&I at the date of this audit.

Water monitoring has been conducted in accordance with the Site Water Management Plan and Surface Water, Groundwater, Meteorological and Biological Monitoring Program. The monitoring data did not exhibit results that indicate a connection between the closed catchment of the CGM operations and the waters of Lake Cowal. Extraction of water from the Bland Creek Paleochannel bore-field and water obtained from the Lachlan Regulated River Water Source did not exceed the allowable extraction rates or volumes during the May 2013 and May 2014 period.



### Cyanide Management

The Cyanide Management Plan required under MCoA 5.3(b) and subsequent addenda have been 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 2013 and May 2014 no cyanide results exceeded the 20mg CN<sub>WAD</sub>/L or the maximum 30mg CN<sub>WAD</sub>/L level. Donato Environmental Services reported on wildlife visitation to the tailings storage facilities and noted that the monitored cyanide concentrations were all below the level that would be expected to cause mortality.

### Hazardous Waste and Chemical Management

The Hazardous Waste and Chemical Management Plan provides the processes and procedures implemented 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 MCoA 5.4, the CGM Emergency Response Management Plan and CGM Safety Management System. 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. The management procedures and protocols have resulted in best practice for any chemicals transported to, stored and/or used on the CGM site.

### Dust

The Dust Management Plan prepared to satisfy MCoA has been implemented for the CGM operations and the dust data collected is reviewed annually by Dr Stephen Cattle of University of Sydney. Management of dust generation occurs in accordance with the Dust Management Plan and compliance was achieved at all residences and bird-breeding and native fauna areas. No complaints in relation to dust were received by CGM between May 2013 and May 2014.

### Blast Management

The Blast Management Plan was prepared to satisfy MCoA 6.3 and the management of blasting has been undertaken in accordance with the Blast Management Plan. The Blast Management Plan required under MCoA 6.3 was revised in May 2010 and submitted to DP&I. Barrick was awaiting written approval from the DP&I of the May 2010 revision at the time of this audit (i.e. May 2014). The Blast Management Plan provides a sound basis for the control of noise and vibration impacts from the CGM activities. Blast overpressure and vibration monitoring has demonstrated compliance of all blasts conducted during weekdays and Saturdays with the criteria specified in the MCoA/EPL/ML conditions. Exceedence of the 95dB(L) Sundays and Public Holidays criteria (MCoA 6.3(a)) occurred from five (5) blasts on between January 2013 and March 2014.

### Noise

The Noise Management Plan prepared to satisfy the requirements of MCoA 6.4(b) has been implemented for the CGM operations. The revised Noise Management Plan was approved by DoP in April 2010. 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 conducted by SLR in January / February and July each year during 2013 and 2014 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 exhibited operational noise criteria exceedences during the May 2013 to May 2014 period

### Traffic Noise

Traffic noise monitoring is included in the revised Noise Management Plan. SLR conduct a traffic survey and attended traffic noise monitoring annually at 130 Ungarie Road (TN1), "Clearview" residence Wamboyne Road (TN2) and Windstone" residence on Wamboyne Road (TN3).

Noise results for the 2013 and 2014 traffic surveys indicate no traffic noise exceedance was at TN1, TN2 or TN3 between May 2013 and May 2014. Barrick entered into Agreements with residents who may potentially be affected traffic noise attributable to the mine traffic, in September 2012.

No complaints from residents regarding traffic noise were received during the period May 2013 to May 2014.

### **Community Complaints**

The complaints handling process and procedure for reporting of complaints and action taken by CGM / Barrick, comply with the requirements of MCoA 10.1 and EPL condition M4. The RIMS database includes all the information required by the approval conditions and details of each complaint and action taken by CGM in response to the complainant. A significant reduction in blasting and noise complaints occurred in late 2013 after CGM finalised agreements with three complainants. All other complaint numbers dropped between May 2013 and May 2014.

### **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 provides responses to the IMP recommendations and address the IMP requirements within the 12 month IMP review period.

Where the intent of the recommendations have not been met by Barrick within the 12 months between the IMP Annual Reports, the IMP have provided comment on the status of action taken by Barrick and provided ongoing or modified recommendations to address the particular issue where required.

### **Conclusion**

The independent environmental audit findings confirm the Cowal Gold Mine has been developed generally in accordance with the project description outlined in the Environmental Assessment documents submitted for Development Approval by the NSW Minister for Planning. The operation of the CGM development is generally in accordance with the predictions in the Environmental Assessments and demonstrates a high degree of compliance with the Minister's Conditions of Approval, Environment Protection Licence conditions and requirements of the conditions attached to the Mining Lease.

## 1.0 INTRODUCTION

### 1.1 Background

The Development Consent granted for the Cowal Gold Mine (CGM) requires an Independent Third Party Audit of compliance in accordance with the Minister's Condition of Approval (MCoA) 8.8(a) - Third Party Monitoring/Auditing:

(a) *An Independent Environmental Audit shall be completed:*

- *six monthly during construction;*
- *12 months after commencement of ore processing;*
- *then every three years thereafter until decommissioning of the mine and ore processing operations respectively, or as otherwise directed by the Director-General.*

*The Applicant shall conduct an environmental audit of the mining and infrastructure areas of the development in accordance with ISO 14010 - Guidelines and General Principles for Environmental Auditing, and ISO 14011 - Procedures for Environmental Auditing (or the current versions), and in accordance with any specifications required by the Director-General. Copies of the report shall be submitted by the Applicant to the Director-General, BSC, DECCW, OoW (NoW), DII (Minerals) and CEMCC within two weeks of the report's completion for comment.*

*(i) The audit shall:*

- a. assess compliance with the requirements of this consent, licences and approvals;*
- b. in the event of any non-compliance, report on the effectiveness of the environmental management of the mine as it may relate to the area of non-compliance;*
- c. be carried out at the Applicant's expense; and*
- d. be conducted by a duly qualified independent person or team approved by the Director-General in consultation with BSC and CEMCC.*

This Independent Environmental Audit was commissioned by Barrick (Cowal) Ltd (Barrick) and conducted by Trevor Brown & Associates between 28 April and 31 May 2014.

### 1.2 Scope of Work

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 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 mine and process plant;
- conduct site inspections and review of on-site documentation and monitoring data relevant to the independent audit;
- hold discussions with project staff in relation to the development consent conditions;
- assess compliance of the project with the development consent conditions and other environmental conditions; and
- prepare an Independent Environmental Audit Report providing assessment of compliance against each consent condition.

### 1.3 Structure of the Audit Report

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

Section 1	Introduction
Section 2	Project Status May 2014
Section 3	Project Environmental Approvals
Section 4	Minister's Conditions of Approval
Section 5	Conclusions
Glossary	
Attachment A	Ministers Conditions of Approval
Attachment B	Environment Protection Licence No. 11912 Conditions
Attachment C	Mining Lease No. 1535 environmental conditions

## 1.4 Compliance Tables

The following terminology is used to express the status of compliance of the CGM with the Minister's Conditions of Approval, Environment Protection Licence and Mining Lease conditions expressed in Attachments A – C:

Compliant	C	Implies compliance with the intent and/or requirement of the approval condition.
Non-Compliant	NC	The specific requirement of the consent condition was not met.
Not Activated	N/A	The condition had not been activated because the activity had not yet commenced.
Not Applicable	NA	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.

## 2. PROJECT STATUS

Following receipt of the Minister's Conditions of Approval (MCoA) for the CGM on 26 February 1999 and preparation and approval of the required environmental management plans in accordance with the MCoA conditions, construction activities commenced in January 2004. Commissioning of the process plant began in March 2006 and an Independent Environmental Audit was conducted in April 2007, 12 months after commencement of the ore processing operations, in accordance with MCoA 8.8(a). Operation of the mine and process plant has continued generally in accordance with the development described in the documents listed in MCoA 1.1, viz:

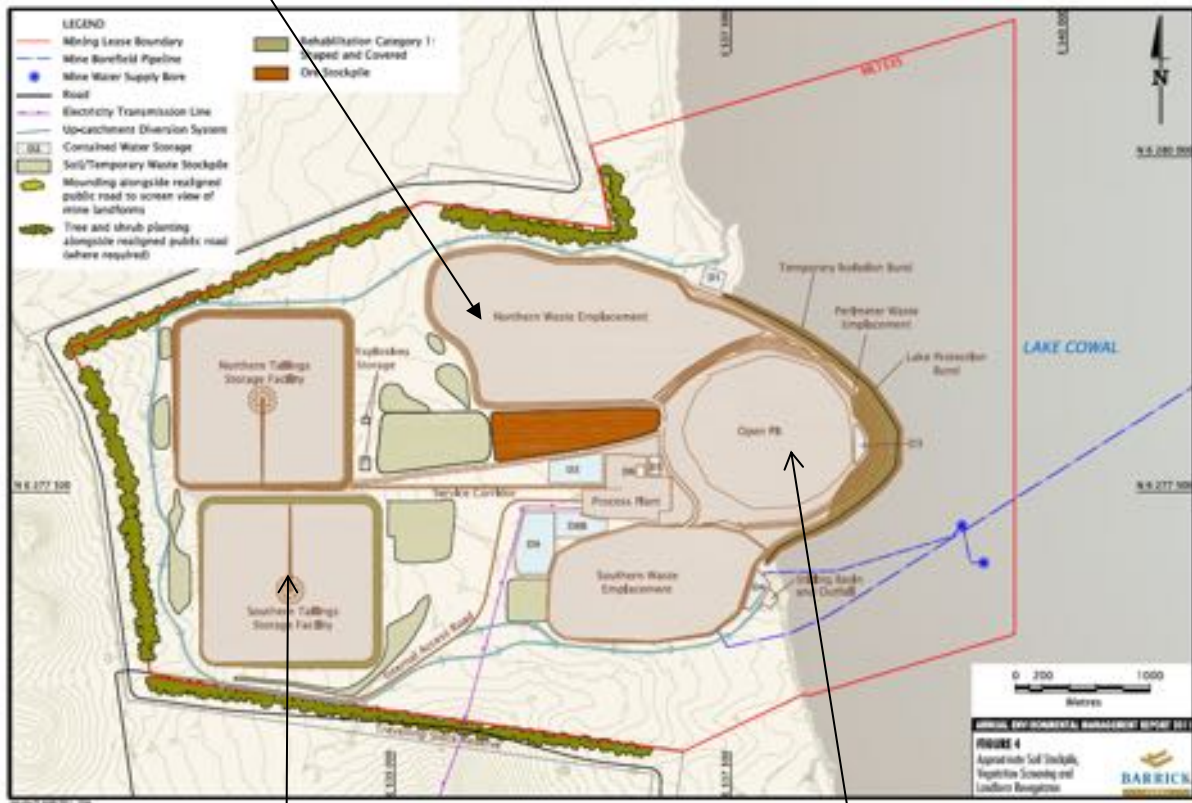
*“(a) The Development is to be carried out generally in accordance with the:*

- (i) EIS dated 13 March 1998, including the Statement of Intent by North Gold (WA) Ltd, and prepared by Resource Strategies, as amended by the plans in Appendix 2 of this consent;*
- (ii) other relevant documentation, including the Applicant's primary submission, and submission in reply to the Commission of Inquiry;*
- (iii) modification application submitted by Barrick Australia Limited, dated 20 June 2003;*
- (iv) modification application and supporting information submitted by Barrick Australia Limited, dated 13 November 2003;*
- (v) modification application and supporting information submitted by Barrick Australia Limited, dated 22 June 2004;*
- (vi) modification application and supporting documentation submitted by Barrick Australia Limited, dated 15 August 2006;*
- (vii) modification application and supporting documentation submitted by Barrick Australia Limited, dated 24 December 2007;*
- (viii) modification application and supporting documentation submitted by Barrick Australia Limited, dated 30 January 2009;*
- (ix) modification application and supporting documentation submitted by Barrick (Cowl) Limited, dated 23 June 2009;*
- (x) modification application dated 25 March 2008 and supporting EA submitted by Barrick Australia Limited;*
- (xi) modification application dated 22 November 2010 and supporting letter submitted by Barrick Cowl Limited; and*
- (xii) modification application dated 16 December 2010 (Mod 10) and supporting Environmental Assessment titled Cowal Gold Mine Water Supply Modification (Section 75W Modification) and dated December 2010, submitted by Barrick (Cowl) Limited; and*
- (xiii) conditions of this consent.”*



**Cowal Gold Mine pit - February 2014**






**Figure 1: Cowal Gold Mine Project - May 2014****Northern Waste Emplacement Area****CGM Tailings Storage Emplacements****CGM Pit (viewed from the east)**

## 2.1 Mine Development May 2013 to May 2014

Mine development components constructed and operated between May 2013 and May 2014 are summarised in Table 1.

**Table 1: CGM Construction during 2010 and April 2013**

Infrastructure Component	Construction Status
<b>Northern Waste Rock Emplacement (NWRE)</b>	<p>No areal expansion of the NWRE occurred during 2013-2014. The NWE emplacement continued to receive waste from the Pit stages D, E, F and G.</p> <p>Some reclamation shaping of the outer northern batter occurred during 2013 with rehabilitation trials established on the Lake Cowal batters of the NWRE.</p>
 <p><b>The Northern Waste Rock Emplacement (NWRE) continued to receive waste rock - May 2013 and May 2014.</b></p>	
<b>Southern Waste Rock Emplacement (SWE)</b>	<p>The SWRE has continued to receive waste rock from Pit with the north-west corner of the SWRE expanded into the area of basal layer where the 'Cowal West' homestead stood until May 2012. The rehabilitation trials on the south side of the SWRE have continued. Pre-treated seed was spread across the trial plots with topsoil treatment in late 2011. The establishment of vegetative growth on the trial plots reduced erosion on the trial plot areas during significant rainfall in 2011 to 2013.</p>
 <p><b>SWRE establishment of vegetative growth on the trial plots May 2014 (trials commenced in October 2009).</b></p>	
<b>Perimeter Waste Emplacement (PWE)</b>	<p>No expansions occurred on the Perimeter Waste Emplacement during the 2013 to 2014 period. Some rehabilitation of the outside lifts above the Lake Protection Bund roadway has occurred and contouring and rock and topsoil placement was progressing at the time of this audit (May 2014).</p>
 <p><b>Perimeter Waste Emplacement rehabilitation trials of the outside lifts (above the Lake Protection Bund)</b></p>	
<b>Tailings Storage Facility (TSF) Sub-soil Stockpile</b>	<p>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 being constructed in May 2014. This process of TSF lifts continues on an annual basis.</p>
<b>Southern Tailings Storage Facility (STSF)</b>	<p>The fourth lift of the STSF became operational from April 2013. Tailings deposition was still occurring to the STSF in May 2014.</p>





**STSF in use May 2014 with recovery of tailings water for use in the process plant.**

**Northern Tailings Storage Facility (NTSF)**

Construction of the next lift of the NTSF was occurring in May 2014.



**NTSF construction of the new lift (May 2014)**

**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 of the outer bund wall from wind / wave erosion resulting from the waters of Lake Cowal.**

**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 the rock-topsoil method for revegetation of the lower batters.**

**Lake Cowal monitoring equipment**

Modification to the monitoring locations and equipment occurred to enable ongoing monitoring in areas of Lake Cowal where water levels have interfered with existing equipment and access to the sites.

Blast monitoring stations on Lake Cowal bed were inundated by 0.10 to 0.50m of water during 2010-2011. New blast logging stations were installed in land-based cabinets in March 2012.



		<p>New tripod stations manufactured in early 2012 were installed to duplicate, taller dust gauges alongside the existing 2m tall monitors. Deployment of the raised dust tripods and ambient noise monitoring logger stands in the 3 to 4m deep parts of Lake Cowal occurred in mid-2012.</p>	
--	--	---	--

## 3.0 PROJECT ENVIRONMENTAL APPROVALS

### 3.1 Development Consent 14/98

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.

**Table 1: Modifications to Development Consent DA14/98**

Date of Modification	Modification Summary
Modification 10 - December 2010 (Part3A Mod)	The proposal involves using an increased proportion of saline water at the mine. Notice of Modification (MOD10, April 2011) allows for the operation of Stage 1 of the eastern saline bore-field.
Modification 9 - November 2010 (Part3A Mod)	The proposal involves an amendment to the development consent to reflect the 15 year mine operation life described in the modified E42 Modification (Modification 6)
Modification 8 - June 2009 (Part4Mod)	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: <ul style="list-style-type: none"> <li>- Expanding an open cut gold mine to extract an additional 23 Mt of ore for processing and supply to market;</li> <li>- increasing the mines maximum production rate from 6.9 to 7.5 million tonnes of ore a year;</li> <li>- expanding a range of associated infrastructure at the mine, such as the tailings dams, waste rock emplacement dumps, and stockpiles; and</li> <li>- extending the life of the mining operation by 2 years.</li> </ul>
Modification 5 – Biological Monitoring and Fauna Reporting	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.

In addition to the Minister's Conditions of Approval on Development Consent 14/98, MCoA 12 requires:

*"The Applicant shall ensure that all statutory requirements including but not restricted to those set down by the Local Government Act 1993, Pollution Control Act 1970, Clean Air Act 1961, Clean Water Act 1970, Noise Control Act 1975, Protection of the Environment Administration Act 1991, Protection of the Environment Operations Act 1997, National Parks and Wildlife Act 1974, and all other relevant legislation, Regulations, Australian Standards, Codes, Guidelines and Notices, Conditions, Directions, Notices and Requirements issued pursuant to statutory powers by the BSC, DECC, DPI(Minerals), DSC, DWE, RTA, DPI (Agriculture), DPI(Fisheries), and RAC, are fully met.."*

The licences, permits and approvals in Table 4 are held by Barrick for the CGM.

**Table 2: Licences, Approvals and Permits for CGM**

Instrument	Relevant Authority	Date Granted	Duration of Approval
Mining Lease (ML 1535)	DII-Minerals	13 Jun 2003	21 years.
Mining Operations Plan	DII Minerals	30 March 2011	January 2011 to September 2012
Environment Protection Licence (No. 11912)	DECCW	23 Dec 2003	The licence is subject to review with the next review due 23 Dec 2016
Permit #1361 under section 87(1) of the <i>National Parks and Wildlife Act 1974</i>	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	
Production bore licence #70BL229248	NoW & EPA	14 Sep 2012	WAL31864 14 Sep 2015
Production Bore Licenses #70BL229249, #70BL229250, #70BL229251	NoW & EPA	14 Sep 2012	WAL31864 14 Sep 2015
Production bore licence #70BL232691 and #70BL232692	NoW & EPA	21 Mar 2014	WAL36615 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	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 14 Sep 2015. Upper 10% (366 units. Upper Lachlan Alluvial Zone 7). Replacement de-watering bore licenses as exchanged for decommissioned bores.
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.

### 3.2 Environment Protection Licence No. 11912

Barrick 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
6 April 2009 1097712	Revision of Scheduled Activity - Mineral Processing; and Fee Based Activity - Mineral Processing >2000,000T processed  <b><u>c.P1.2 - Groundwater monitoring locations revised</u></b>

**c.L5.2(e) inserted:**

Waste generated at the premises as described in Attachment A of the licence variation application supporting documentation for Proposed On-Site Waste Tyre Management' was received by the DECC on the 4 February 2009. Waste tyres were classified as special waste in accordance with the Waste Classification Guidelines (DECC 2008) is permitted by this licence to be disposed at the premises.

**c.M7.1(a) revised:**

Airblast overpressure and ground vibration levels must be measured at blast monitoring locations labelled as "BM01", "BM02", "BM03", "BM04" and "BM05" in Figure 2 'Blast Monitoring Sites' Locations' of the proposed addendum to the "Cowal Gold Project Blast Management Plan" dated August 2003 received 12/2/2009 and on DECC file FIL07/2610-05 - for all blasts carried out in or on the premises; and

17 July 2009 1103991	<b><u>c.A4.2(5) insert</u></b> - Modifications to the Cowal Gold Project approved by the Department of Planning.  <b><u>c.M2.1 revised:</u></b> Monitoring Points 39 and 48 deleted
24 June 2011 1126045	Licensee amended: Barrick (Cowal) Limited <b><u>c.L3.3 delete Monitoring Points 46 and 47 and reinstate and revise Monitoring Point 48</u></b> <b><u>c.L6 Noise Limits conditions L6.1 L6.3 revised</u></b> <b><u>c.L7 Blasting – conditions L7.1 to L7.4 revised</u></b> <b><u>c.M7.1(a) Blast monitoring locations revised</u></b>
2 May 2013 1513100	The computer system used by the EPA to store and process licences has been upgraded. Some changes to the format of the licence may have occurred as a result of the upgrade. Conditions that were previously recorded as "not applicable" have been removed from the licence. These upgrades are not intended to change the substance of the licence. By this notice the EPA varies licence No. 11912. The attached licence document contains all variations that are made to the licence by this notice.
21 May 2014 1522063	c.M2.4 – Update to state that the monitoring at points 14, 15, 16, 17 and 18 is not required when the water level in Lake Cowal is at or below 204.5m AHD.

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

### 3.3 Mining Lease ML1535

Mining Lease (No.1535) area of 2,650 hectares was granted to Barrick under the *Mining Act 1992* on 13 June 2003. .

The October 2012 to January 2014 MOP was approved by the DTIRIS (Minerals) on 19 December 2012. On 4 October 2013, the Director-General 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

A draft Mining Operations Plan (MOP) has been prepared by Barrick in accordance with the requirements of the Mining Lease 1535 condition 25, MCoA 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). This MOP (when approved) will replace the previous MOP and 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 Environmental Management System

Barrick (Cowal) Limited gained Certificate of Registration under ISO14001-2004 on 12 June 2013. Certificate of Registration No. 495 was issued by ERM Certification and Verification Services (ERMC-VS) for Mineral and Ore Processing Operations and Support Services for Gold and Silver production.

## 4. MINISTER'S CONDITIONS OF APPROVAL

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.

This Independent Environmental Audit reviewed the available documentation for the CGM operations between 1 May 2013 and 1 May 2014, in relation to the Consolidated Minister's Conditions of Approval (MCoA) dated January 2011 and other environmental approval conditions granted for the mining activities and process plant.

Where an authority other than DP&I has administrative responsibility for the requirements of a condition or other approvals, compliance status has been determined by reviewing correspondence from the relevant agencies in relation to the conditions of approval.

Review of compliance and comments on the MCoA for the CGM are summarised in Attachment A. Additional specific comments on the implementation of the Environmental Management Plans are presented below.

### 4.1 Environmental Management Plans

The majority of the Environmental Management Plans for the CGM were initially approved by the Director-General in 2003. MCoA 3.2 requires the review and revision/update of the Environmental Management Plans (as necessary to address the current operations of the mine and process plant) to be undertaken at least every five years. Reviews have been conducted and revision of the management plans has occurred as necessary.

All EMP's were reviewed in 2008-2009 and revised as necessary in accordance with MCoA 3.2(a). Revisions of the Management Plans were submitted to the relevant authorities where consultation was required and then submitted to DoP/DP&I. Some of the revised management plans were still awaiting approval by DP&I at the date of this audit (i.e. 28 April 2013 to 31 May 2014):

- Revised Rehabilitation and Offset Management Plan (lodged 21 August 2013)
- Flora and Fauna Management Plan - Threatened Species Management Strategy (lodged 13 November 2012)
- Revised Noise Management Plan (lodged 24 December 2012)
- Revised Site Water Management Plan (lodged 8 August 2013)
- Addendum Surface Water, Groundwater, Meteorological and Biological Management Programme (Mine Operations) (lodged 13 August 2013)
- Post Mine Operations SGWMBMP (lodged 10 October 2013)
- Revised Blast Management Plan (lodged 11 December 2012)
- Addendum to Flora Fauna Management Plan response sent 13 November 2012.

Management plans revisions during 2012 to 2014 have included:

- Cyanide Management Plan was amended and approved by the DoP on 20 October 2010.
- Rehabilitation and Offset Management Plan submitted to the DoP on 30 July 2010 following consultation with DECCW, OoW and BSC. An addendum to the Rehabilitation and Offset Management Plan was submitted to DoP in December 2010. Comments were received by Barrick from DP&I on 14 August 2012.
- Threatened Species Management Strategy was prepared in consultation with DECCW (for the Inland Forest Bat, Sloanes Froglet and Woodland birds) and was accepted by DECCW without objections on 23 February 2011. The Threatened Species Management Strategy was submitted to DoP on 28 February 2011 and comments to this addendum to the Flora and Fauna Management Plan were received from DP&I on 14 August 2012. A revised Flora and Fauna Management Plan addressing the DP&I comments was prepared by Barrick and

submitted to the DP&I on 13 November 2012. No response had been received by Barrick from DP&I at the date of this audit.

- Noise Management Plan was lodged with DoP on 30 July 2010 and comments received from DP&I on 14 August 2012. A revised Noise Management Plan addressing the DP&I comments was submitted to DP&I on 24 December 2012. No response had been received by Barrick from DP&I at the date of this audit.
- Blast Management Plan was revised and the revision accepted by DECCW and DI&I. The Blast Management Plan was submitted to DoP in May 2012 and comments were received by Barrick from DP&I on 14 August 2012. A revised Blast Management Plan addressing the DP&I comments was submitted to DP&I on 11 December 2012. No response had been received by Barrick from DP&I at the date of this audit.
- Site Water Management Plan revised and submitted to DP&I in February 2012 and comments were received by Barrick from DP&I on 14 August 2012. Barrick responded to the comments from DP&I but no response had been received by Barrick from DP&I at the date of this audit. A further revision of the Site Water Management Plan was prepared and submitted to DP&I in August 2013, and no response had been received by Barrick from DP&I at the date of this audit.
- Surface Water, Groundwater, Meteorological and Biological Management Program was revised and approved by DP&I in July 2011. An addendum to the Protocol was submitted to DoP in November 2011 and approved by DP&I on 14 August 2012. A further revision of the Site Water Management Plan was prepared and submitted to DP&I in August 2013, and no response had been received by Barrick from DP&I at the date of this audit.
- Hazardous Waste and Chemical Management Plan was revised and approved by DP&I on 13 May 2011.

The latest revision of the EMP's that address the requirements of the latest modifications to the Development Consent (i.e. MOD 10), are being implemented for the management of the CGM operations although they had not been officially approved by DP&I at the date of this audit.

Specific comments on the commitments made in each of the management plans and the implementation of the management plans for the CGM are presented under specific conditions below.

Compliance status of each specific management plan is addressed in the table in Attachment A - MCoA conditions.

#### Recommendation 1

The management plans required under the MCoA are due for review each 5 years in accordance with MCoA 3.2. As a response has not been received from DP&I on a number of the revised management plans submitted during the 2012-2014 period, it is recommended that the review of each of the management plans occur when the decision by DP&I on MOD11 for the CGM Project and approval conditions are finalised.

## 4.2 Heritage Management

[Minister's Condition of Approval 3.3]

### 4.2.1 Heritage Management Plan




[Minister's Condition of Approval 3.3(a)(i)]

The Heritage Management Plan for non-indigenous heritage was prepared to satisfy MCoA 3.3(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 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.
s.7/p18	The non-indigenous heritage program will be revised / updated annually, unless otherwise stated by the D-G, to reflect changing environmental requirements, significant changes in technology / operational practices and results from monitoring conducted (MCoA 8).	The non-indigenous heritage program has been reviewed annually. Demolition of the 'Cowel West Homestead Complex' (CWHC) was approved via MOD 9 March 2010. Demolition of the homestead occurred during 2011-2012. Relocation of the Shearing Shed and reconstruction of that building at the Lake Cowal Foundation Information Centre was completed in April 2013. An opening ceremony was held on 19 April 2013.
 <p><b>Plate 1: Shearers Shed (rear) reconstruction completed April 2013, at LCF Information Centre</b></p>		 <p><b>Plate 2: Shearers Shed (front) reconstruction completed April 2013, at LCF Information Centre.</b></p>
 <p><b>Plate 3: Reconstructed shearing shed – internal structure with original components recovered from CGM site.</b></p>		
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. (MCoA 9.2)	Annual Environmental Management Reports (AEMR) have been prepared by CGM in accordance with MCoA 9.2 and the heritage components are reported in section 3.14.

#### 4.2.2 Indigenous Archaeology and Cultural Heritage Management Plan

[Minister's Condition of Approval 3.3(a)(ii)]

The Indigenous Archaeology and Cultural Heritage Management Plan was prepared to satisfy MCoA 3.3(ii) and 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 will be reviewed and revised as necessary to reflect the *Due Diligence Code of Practice for Protection of Aboriginal Objects in NSW*, latest revision (dated 24 February 2010) during the triennial WCCC-Barrick (Cowal) Deed Review.

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 2014.

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. ( <b>Permit 1682 Special Condition 11</b> )	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 Aboriginal objects that had not been previously identified during the archaeological surveys have been identified during CGM construction works during May 2013 to May 2014.
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: <ul style="list-style-type: none"> <li>• Sufficient data must be recorded to enable technological analysis to be undertaken for report purposes;</li> <li>• This information must form the basis of a master inventory;</li> <li>• Each object must be bagged and labelled detailing the specific area of collection.</li> </ul> (Special Condition 12 of Permit 1468 and Special Condition 4 of Permit 1681).	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.
S5.6/p21	All collected Aboriginal objects must be kept in a temporary Keeping Place on the project site until a	All collected Aboriginal objects are currently kept in a temporary Keeping Place on the CGM project



Section/ Page No.	Indigenous Archaeology and Cultural Heritage Management Plan Commitments	Comments
	permanent Keeping Place is available.	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. ( <b>Special Consent 1467 condition 9</b> )	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 completed but the objects have not yet been transferred to the permanent site.
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 management measures to be included during works for the nominated MOP term.	Barrick has prepared the following Mining Operations Plans for the CGM development: <ul style="list-style-type: none"> <li>• MOP June 2007 to June 2009 was approved by DPI in June 2007.</li> <li>• MOP April 2009 to December 2010. An Addendum to the April 2009 to December 2010 MOP was submitted on 18 March 2010</li> <li>• An extension of the 2009-2010 MOP until 31 March 2011 was granted by DI&amp;I on 23 November 2010.</li> <li>• MOP January 2011 to September 2012</li> <li>• A Variation to the January 2011 to September 2012 MOP was requested 5 April 2012.</li> <li>• MOP October 2012 to January 2014.</li> <li>• MOP extension to January 2015.</li> <li>• Draft MOP for April 2014 to April 2016 has been prepared</li> </ul>
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 MCoA 9.2 and Aboriginal Heritage matters are reported in section 3.13, and European Heritage matters are reported in section 3.14.

### 4.2.3 Conclusion

The Non-Indigenous Heritage Management Plan prepared for the CGM site provided for management of the 'Cowel West Homestead Complex' components (including the Shearing Shed). Demolition of the Homestead complex was approved via Development Consent MOD 9 March 2010. Demolition of the homestead 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 from any areas prior to disturbance 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*.

## 4.3 Flora and Fauna Management

[Minister's Condition of Approval 3.4]

### 4.3.1 Flora and Fauna Management Plan




The Flora and Fauna Management Plan prepared to satisfy MCoA 3.4 was approved by DIPNR on 30 October 2003. The Flora and Fauna Management Plan was updated/amended 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. No response or approval had been received from DP&I at the date of this audit.

The Flora and Fauna Management Plan, provides general management strategies for the conservation of wildlife values within ML1535 and around Lake Cowal. 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.

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: <ul style="list-style-type: none"> <li>designed to minimise the area of open water in the tailings dams;</li> <li>fenced to prevent terrestrial fauna from entering the areas;</li> <li>designed to maintain the area non-conductive to the establishment of wildlife habitats; and</li> <li>designed using of current best practice methods to deter avifauna.</li> </ul>
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,	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.

Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
	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).	
 <p><b>Plate 4: 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.</b></p>		
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 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.	<p>The tailings storage facilities have been suitably fenced. Access to the tailings storage facilities by CGM personnel is only gained through locked gates. Gates are closed immediately after entry or exit of vehicles.</p>  <p><b>Plate 5: Fencing around the Tailings Storage Facilities to prevent terrestrial fauna entering the TSF.</b></p>
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.
 <p><b>Plate 6: Rehabilitation of tailings storage facility batters with grass cover to stabilise the walls.</b></p>		
s.3.5/p.16	"Bird-Friten" ammunition (or similar) may be fired at the tailings storage facilities during	Use of cannons at the tailings storage facilities has been implemented, plus radar



Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments										
	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).	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.										
s.4.1/p.17	Usage of the tailings dams by bat fauna will also be monitored using an Anabat CF Zcain 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	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 <i>Seasonal wildlife use patterns of the Cowal Gold Mine tailings storage facility</i> .										
s.4.2/p.18	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.	Reports are provided to the OEHL (EPA and NPWS) on a six monthly basis and a summary of all records are presented in the AEMR section 3.8.										
s.5/p.18	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.	Wildlife rescue and rehabilitation plans have been prepared in consultation with the Wildlife Information and Rescue Service (WIRIS). The plans are provided in the Flora and Fauna Management Plan sections 5.1 and 5.2.										
s.6.1/p.20	In the event that fauna incidents are observed, the following details and observations will be recorded: <ul style="list-style-type: none"><li>• observer details (ie. name and position);</li><li>• date and time of inspection;</li><li>• type of species;</li><li>• number of individuals of each species;</li><li>• location; and</li><li>• any other details of the fauna incident.</li></ul> (Flora and Fauna Management Plan addendum June 2008)	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>	Date/Time of Incident	14 February 2011	Location	TSF gravel access track.	Species and number of individuals	Dwyer's Black-headed Snake (1)	Description of Incident	Deceased snake noted on the gravel track.	Outcome	Injuries consistent with vehicular impact.
Date/Time of Incident	14 February 2011											
Location	TSF gravel access track.											
Species and number of individuals	Dwyer's Black-headed Snake (1)											
Description of Incident	Deceased snake noted on the gravel track.											
Outcome	Injuries consistent with vehicular impact.											
s.6.2/p.20	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	Records of all fauna deaths are prepared by CGM and reported in the AEMR section 3.8. Any fauna deaths attributable to cyanide are reported within 24 hours to the OEHL, DTIRIS (DRE) and CEMCC and in the case of fish, DPI (Fisheries).										



Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
	MCoA 3.4(a)(ii). <u>(Flora and Fauna Management Plan addendum June 2008)</u>	
s.6.3/p.20	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. 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. <u>(Flora and Fauna Management Plan addendum June 2008)</u>	Fauna autopsies are undertaken by the West Wyalong Veterinary Clinic as required. The dead fauna requiring autopsy are delivered to the West Wyalong Veterinary 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: <ul style="list-style-type: none"> <li>• Compensatory Wetland Management Plan Initiatives (Section 9.2).</li> <li>• Remnant Vegetation Enhancement Programme (Section 9.3).</li> <li>• Rehabilitation of ML 1535 Disturbance Areas (Section 9.4).</li> <li>• Project Design (Section 9.5).</li> <li>• Threatened Species Management Protocol (Section 9.6).</li> <li>• Vegetation Clearance Protocol (Section 9.7).</li> <li>• Weed Management (Section 9.8).</li> <li>• Pest Control (Section 9.9).</li> </ul>
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.



**Plate 7: Northern Offset area fenced around Barrick owned land to exclude livestock (May 2014).**

Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
 <p><b>Plate 8: Land adjacent to Northern Offset area (not Barrick owned land) where grazing is not excluded (May 2014) and regeneration of native species is reduced by livestock grazing.</b></p>		
 <p><b>Plate 9: Lake Cowal foreshore enhancement area fenced to exclude livestock showing regeneration and regrowth of River Redgum (May 2014).</b></p>		
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. The targets for rehabilitation in the MOP have not generally been met due mainly to weather conditions. The rehabilitation activities during 2013 and May 2014 have improved 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	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

Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
	immediate surrounds. The Threatened Species Management Protocol will be implemented in accordance with MCoA 3.4(b).	Protocol was not triggered between May 2013 and May 2014.
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 MCoA 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 LWMP/LC 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 20143 to May -2014 period.
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 MCoA 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 and BM06) are located proximal to bird breeding areas..... Barrick is required to undertake remedial measures if blasting overpressure	Bird breeding activity has been variable since the filling of Lake Cowal and it was reported that blasting had not had any effect on bird breeding activity.

Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
	demonstrably disturbs bird breeding.	
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 (May 2014), as the mine construction works are not completed.
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.	Refer to DnA Environmental, January 2014, <i>Compensatory Wetland Monitoring Results</i> and DnA Environmental, February 2014  A simple and rapid procedure for monitoring was developed by CSIRO (Gibbons 2002), for assessing habitat quality across a range of vegetation types resulting in the Biometric Model used in the Property Vegetation Planning Process (Gibbons <i>et al</i> 2008). Some adaptations have been made to incorporate aspects of newly formed revegetation sites (at Cowal) in the early stages of recovery. <i>In conclusion it appears grazing pressure and climatic influences have had a dramatic influence on the wetland communities with the early results indicating that improved management in the grazed wetland areas was required, particularly during the very dry years. The lake foreshores have provided a dynamic environment as a result of flood waters and active wave action and these have had a significant influence on the structure and composition of the two lake foreshore communities as quantified by the annual monitoring program."</i>
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. ( <u>Flora and Fauna Management Plan addendum, May 2010</u> ).	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, 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 " <i>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</i> ".
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.



Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
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. <u>(Flora and Fauna Management Plan addendum, May 2010)</u>	Dust deposition monitoring has occurred in accordance with the Dust Management Plan where possible. During the March, April, May and June 2012, the high water level of Lake Cowal resulted in the loss of some dust gauges located at sites within the lake. (Ref: Cattle, S. <i>Interpretation and Discussion of 2012 Air Quality Monitoring Results, Cowal Gold Mine</i> , University of Sydney). Modified dust gauge stands were installed enable data collection from the submerged sites.
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 has been conducted six monthly by SLR in accordance with the Noise Management Plan during the 2010-2013 period.
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 proximal to bird breeding areas. In accordance with MCoA 6.3(i), Barrick will undertake remedial measures if blasting overpressure demonstrably disturbs bird breeding.	All blasts at CGM have been monitored in accordance with the Blast Management Plan.  Blasting has not been reported to 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. <u>(Flora and Fauna Management Plan addendum, May 2010).</u>	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.
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 <i>"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</i>
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. <u>(Flora and Fauna Management Plan</u>	

Section/ Page No.	Flora and Fauna Management Plan Obligations	Comments
	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.	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.12.2.4.4/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 2013 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 will be prepared in accordance with the requirements of Consent Condition 9.2	Annual Environmental Management Reports (AEMR) prepared by CGM in accordance with MCoA 9.2 reported flora and fauna management in sections 3.7 and 3.8.

#### 4.3.2 Flora and Fauna Monitoring

The following comments are provided on the implementation and monitoring associated with the Flora and Fauna Management Plan:

- No replanting or additional tree and shrub planting occurred in the four monitoring quadrants set up on Fellmans Hill Revegetation Enhancement Project (RVEP) between May 2013 and May 2014. Monitoring at Fellmans 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, University of Ballarat. The summary of findings of the bird surveys indicated:

*“Dry climatic conditions have resulted in the level of Lake Cowal falling between August 2013 and January 2014 survey. The reduced depth increased the extent of shallows around the margins of the lake reducing further habitat for birds typical of deeper waters (e.g. Eurasian Coot and diving birds such as grebes).*

*The shallow waters continued to provide habitat for wading birds. This represents the terminal phase of community change over a filling and drying cycle with wading species making use of the extensive shallows after an extended phase of fish-eating species dominating when lake levels are higher.*

*The highest species count continued to be recorded on the mine site transect (T1) that may arise as the bund wall extends out into the lake, while the northern and southern ends of the transect represent typical littoral habitat.*

*Colonial breeding typically commences by October each year and often extends into January. There was no apparent breeding in October, and with further lowering of water levels, this continued into January 2014.”*

- An annual 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, 2013 (D M McMahon Pty Ltd), in relation to water quality for Lake Cowal stated:
  - The results of the surface water monitoring reported for 2013 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 Lake Cowal surface water quality results against the baseline water quality results from 1991 – 1992 and 2010-2012 indicates that the 2013 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) indicates 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.
- The summary in the *Cowal Gold Mine, Compensatory Wetland Habitat and Fish Investigation* February 2014 (frc environmental) stated:

*“The diversity of fish species in Lake Cowal in the 2011 to 2014 surveys has been low.*

*Overall, only six species have been caught in the recent surveys, with three being native species (common carp gudgeons, Australian smelt and bony bream), and three being introduced species (mosquito fish, goldfish and carp). Only two native species, the common carp gudgeon and bony bream, were caught in February 2014, with the two other fish species caught being introduced.*

*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).*

*Based on the assessments of aquatic habitat and fish communities, the Compensatory Wetland, Enhancement Wetland and the New Lake Foreshore areas within ML 1535 have similar habitat compared to adjacent comparative sites, and provide structure that supports feeding, shelter and reproduction for a variety of fish species. The current surveys clearly show the dominance of species that are resilient to harsh environmental conditions and that can rapidly colonise newly available habitat, especially introduced species recorded during the surveys, and only one native species (i.e. common carp gudgeons)."*

### 4.3.3 Conclusion

The Flora and Fauna Management Plan, provides an adequate basis for the management of flora and fauna on the CGM 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.

## 4.4 Erosion and Sediment Control Management

[Minister's Condition of Approval Condition 3.5(a)]

### 4.4.1 Erosion and Sediment Control Management Plan

The Erosion and Sediment Control Management Plan required by MCoA 3.5(a) was approved by DIPNR in 2004. Review of the Erosion and Sediment Control Plan was conducted during 2009 and the applicability of the plan to the operational management of the site assessed during the review process. 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. The Plan was amended and submitted for approval in March 2009.

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**

Page No./section	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;	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

Page No./section	Erosion and Sediment Control Management Plan Commitments	Comments
	maintenance requirements (if necessary) including instructive actions; volume of sediment removed (eg. from sediment basins to retain capacity requirements); and sediment disposal locations	recorded during the period the lake bed was dry. The monitoring of the pipeline route, rehabilitation has not occurred during the period of inundation of Lake Cowal between 2010 and May 2014.
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 disturbance. All employees will undertake an induction/training programme.	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 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 Consent Condition 4.1/4.2(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	The Vegetation Clearance Protocol



Page No./section	Erosion and Sediment Control Management Plan Commitments	Comments
	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.	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.
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.

#### 4.4.2 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. Investigation of the lake protection bund indicated that the increased rainfall experienced during 2010 and 2012 had not significantly impacted on the stability of the lake protection bund structure. Some surface erosion and sediment movement was evident. 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:

*“The comparison of the 2013 Lake Cowal surface water quality results against the baseline water quality results from 1991 – 1992 and 2010-2012 indicates that the 2013 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 2010-2014 the period of inundation of the Lake Cowal bed. The erosion and sediment control structures appear to have intercepted sediment laden runoff from the site and retained the sediment in the ponds (D4 and stilling basin) prior to any discharge on water from the site to the Lake.

Stabilisation works conducted on the batter slopes of the Southern Tailings Storage Facility and Northern Tailings Storage Facility, using rock ribbons along the batters has retained topsoil/sediment and reduced erosion during the 2013 to 2014 period. The outer slopes of the 4<sup>th</sup> Lift of the Southern Tailings Storage Facility and 3<sup>rd</sup> Lift of the Northern Tailings Storage Facility were completed using the new rock-topsoil method during 2011-2013 and was observed during this audit to be successfully stabilising the batters reducing overall erosion and providing for establishment of vegetative cover.

#### 4.4.3 Conclusion

The erosion and sediment control strategies implemented for the CGM project site in accordance with the Erosion and Sediment Control Plan are considered to be effective in meeting the objectives of the 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.

### 4.5 Soil Stripping Management

[Minister's Condition of Approval 3.5(b)]

#### 4.5.1 Soil Stripping Management Plan

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).

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.
s.4/p9	Progressively rehabilitate final landforms 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

Section /Page No.	Soil Stripping Management Plan Commitments	Comments
		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 <i>National Parks and Wildlife Act, 1974</i> . 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, " <i>all areas where soil stripping occurs shall be inspected following this operation in the event that datable materials might be revealed</i> " (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 <i>National Parks and Wildlife Act, 1974</i> .
s.4.3/p12	Vegetation Clearance Protocol and Threatened Species Management Protocol will be implemented when stripping soil, including: <ul style="list-style-type: none"> <li>• pre-clearance survey for flora;</li> <li>• targeted survey for any threatened species recorded in the mine site area; and</li> <li>• preliminary and secondary fauna habitat assessments (MCoA 3.4(a) and (b)).</li> </ul>	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 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)	The relevant Vegetation Clearance, Threatened Species Management, Aboriginal Heritage, and Land Clearance 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: <ul style="list-style-type: none"> <li>• watering of works areas when necessary;</li> <li>• installation of soil/sediment control measures where necessary (e.g. the installation of silt fencing);</li> <li>• regular inspection of works and stockpile areas and enactment of any remedial or response measures with respect to dust and soil/sediment control.</li> </ul>	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.	The installation of the pipeline along the alignment from the Paleochannel bore-field to the CGM site was undertaken in 2004



Section /Page No.	Soil Stripping Management Plan Commitments	Comments
	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)).	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 maintenance records in accordance with the requirements of the DIPNR and EIS.	All soil stockpiles are recorded on a site database that details the location and volume of each stockpile and the stockpile maintenance records.
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.

Section /Page No.	Soil Stripping Management Plan Commitments	Comments
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: <ul style="list-style-type: none"> <li>the implementation of the rehabilitation programme in accordance with the above general principles;</li> <li>rehabilitation maintenance work;</li> <li>rehabilitation monitoring activities and compliance with the DMR's Mining Rehabilitation and Environmental Management Process.</li> </ul>	Rehabilitation of disturbed areas is undertaken in accordance with the Rehabilitation and Offset Management Plan, the approved MOP for ML 1535, and in accordance with the DMR <i>Mining Rehabilitation and Environmental Management Process</i> .
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.

#### 4.5.2 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<sup>3</sup> of topsoil and 2.0 million m<sup>3</sup> of subsoil are stored on site.

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.

#### 4.5.3 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 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.

## 4.6 Rehabilitation and Offset Areas

[Minister's Condition of Approval 3.6]

### 4.6.1 Rehabilitation and Offset Management Plan

The Rehabilitation and Offset Management Plan was prepared to satisfy MCoA 3.6(b) and submitted to the DoP on 30 July 2010 following consultation with DECCW, OoW 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 prepared in August 2013 for submission to DP&I.


The Rehabilitation and Offset Management Plan addresses each of the requirements of MCoA 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 references/includes 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.

Commitments in the Rehabilitation and Offset Management Plan 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 2013-2014.
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 has been 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 was affected by the dry weather experienced up to 2011. Vegetation establishment has occurred since 2011 on the treated areas following the increased regular rainfall during 2011 and 2013.
s.3.2.6 / p18	Management of soil stockpiles has been established in the Soil Stripping Management Plan (SSMP) (Barrick, 2003c) and includes soil handling measures that optimise the retention of soil characteristics (in terms of nutrients and micro-organisms) favourable to plant growth.	Management of topsoil stockpiles is conducted in accordance with the 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 for any undisturbed area, prior to any vegetation clearance occurring. The pre-clearance surveys are conducted by suitably qualified consultants.
s.3.2.9 / p20	Progressive rehabilitation of waste emplacements and the tailings storage	Rehabilitation trials have occurred on the batters of the tailings storage facilities and

Section /Page No.	Rehabilitation and Offset Management Plan Commitments	Comments
	facilities will be undertaken to reduce the contrast between the CGM landforms and the surrounding landscape.	waste emplacements to determine suitable rehabilitation methodology and to reduce contrast with the surrounding landscape.
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 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 provide some screening of the mine areas from Lake Cowal Road.
		
<b>Plate 9: View of the CGM from Lake Cowal Road with vegetative establishment around the mounds.</b>		
s.3.2.12 / p21	Weeds will be managed at the CGM in accordance with measures described in the Land Management Plan (LMP).	Weeds 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 LMP 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.
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 implemented by the CGM Emergency Response Officers to manage fire hazard risk.
s.3.3 / 24	Performance criteria for mine site rehabilitation have been developed to reflect the measures for mine site rehabilitation.	Rehabilitation and Offset Management Plan Table 2 provides the performance criteria for mine site rehabilitation.
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 the performance and completion criteria (MCoA 3.6(d)(v)).	DnA Environmental conduct an annual rehabilitation monitoring program and have developed a set of completion criteria that complies and is consistent with conditions of approval and management plans, and aligns with the DTIRIS-MR (2011) <i>Rehabilitation and Environmental Management Plan (REMP) Guidelines Consultation Draft V2.0 June 2010</i> . Monitoring occurs during spring to capture an accurate representation of species present in the area. A summary of the results of this monitoring, and a description of any additional measures required, are provided in the AEMR.
s.3.4.2 / p27	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,	Annual monitoring of the Lake Foreshore areas is conducted by DnA Environmental to assess establishment of the vegetation. Results of the surveys are reported in the AEMR section 3. 7.3.2.

Section /Page No.	Rehabilitation and Offset Management Plan Commitments	Comments												
	erosion control or weed and pest control).													
s.3.4.2 / p27	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 the requirement for supplementary plantings, erosion control and weed control).	Visual monitoring of revegetated landforms is conducted by DnA Environmental to assess establishment of the vegetation planted. Results of the surveys are reported in the AEMR section 3. 7.3.2.												
s.3.4.2 / 27	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.	Performance of erosion and sediment control against the requirements in the Erosion and Sediment Control Management Plan is undertaken following significant, high intensity rainfall events, and reported in the AEMR section 3.2.												
s.3.4.2 /p28	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.	Twice daily monitoring of fauna usage of the tailings facilities has been undertaken since the commissioning of the facilities in April 2006. Six-monthly reporting on fauna usage of the TSFs by Donato Environmental Services and the reports are included in the AEMR.												
	<b>Offset Areas</b>													
S4.1.1/p29	Locations of the northern and the southern offset areas are within the following properties owned by Barrick:  Northern Offset Area <ul style="list-style-type: none"> <li>• 8/753097; and</li> <li>• 1/530299.</li> </ul> Southern Offset Area <ul style="list-style-type: none"> <li>• 19/753083; and</li> <li>• 18/753083.</li> </ul>	<b>Proposed Offset Areas</b> <table border="1"> <thead> <tr> <th>Offset Management Area</th><th>Description</th><th>Minimum Size [ha]</th></tr> </thead> <tbody> <tr> <td>Enhancement Area (Southern Offset Area) 18/753083 and 19/753083</td><td>Enhancement through natural regeneration and management for conservation.</td><td>110</td></tr> <tr> <td>Revegetation Area (Northern Offset Area) 1/530299 and 8/753097</td><td>Re-establishment of woodland in cleared agricultural land by revegetation.</td><td>100</td></tr> <tr> <td colspan="2"><b>Total Area Conserved (ha)</b></td><td>210</td></tr> </tbody> </table>	Offset Management Area	Description	Minimum Size [ha]	Enhancement Area (Southern Offset Area) 18/753083 and 19/753083	Enhancement through natural regeneration and management for conservation.	110	Revegetation Area (Northern Offset Area) 1/530299 and 8/753097	Re-establishment of woodland in cleared agricultural land by revegetation.	100	<b>Total Area Conserved (ha)</b>		210
Offset Management Area	Description	Minimum Size [ha]												
Enhancement Area (Southern Offset Area) 18/753083 and 19/753083	Enhancement through natural regeneration and management for conservation.	110												
Revegetation Area (Northern Offset Area) 1/530299 and 8/753097	Re-establishment of woodland in cleared agricultural land by revegetation.	100												
<b>Total Area Conserved (ha)</b>		210												
s.4.3.1/p34	Within Offset Enhancement Areas the following revegetation activities will occur: <ul style="list-style-type: none"> <li>• revegetation of unnecessary access tracks;</li> <li>• selective planting in other cleared areas where natural regeneration is not occurring.</li> </ul> Annual inspections will identify areas within the Offset Enhancement Areas which will benefit from selective plantings.	Existing fences around the offset areas are being maintained or improved by Barrick. No access tracks within the offset areas have required revegetation. Any other work commitments related to the offset areas are on hold, awaiting approval of DP&I of the Voluntary Planning Agreement for the proposed offset areas submitted to DP&I on 28 April 2014.												
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 are on hold, awaiting approval of the Voluntary Planning Agreement (VPA) by DP&I . Pest control activities within the offset areas have been conducted in accordance with the Land 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.	Fox baiting was undertaken in May 2012 to November 2012.												
s.4.3.5/p41	Grazing and cropping activities will be excluded within the offset areas.	Grazing has been excluded from the proposed offset areas. Measures and work commitments are delayed, awaiting approval of the VPA by DP&I .												
s.4.4/p42	From Spring 2012, the performance of the	Performance measure monitoring has been												



Section /Page No.	Rehabilitation and Offset Management Plan Commitments	Comments
(Table 8)	offset areas will be measured against the following performance criteria: <ul style="list-style-type: none"> <li>• Selective revegetation undertaken within Offset Revegetation Area and Offset Enhancement Areas.</li> <li>• Weed control and feral pest measures are effective.</li> <li>• Grazing and cropping activities excluded within the offset areas and perimeter fencing maintained.</li> <li>• Access to the offset areas restricted to authorised personnel and perimeter fencing maintained.</li> <li>• Bushfire management undertaken in accordance with the BMP.</li> </ul>	delayed, awaiting approval of the VPA by DP&I for the proposed offset areas.  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 by DnA Environmental of the proposed offset areas has occurred and existing fences are maintained. Other work is awaiting approval of the VPA by DP&I for the proposed offset areas.
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 described below reflects the NPWS (2003) <i>Conservation Management Note 9 – Photographic Monitoring</i> .	Permanent photo points have been established by DnA Environmental and are reported on in the biological monitoring reports.
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 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: <ul style="list-style-type: none"> <li>• a Voluntary Conservation Agreement; or</li> <li>• a Property Vegetation Plan; or</li> <li>• rezoning and/or re-conditioning of relevant landholdings to reflect conservation purposes in consultation with the BSC.</li> </ul>	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. DP&I suggested a Voluntary Planning Agreement (VPA) could be used for the Offset areas.  The Voluntary Planning Agreement for the proposed offset areas was submitted to DP&I on 28 April 2014.
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 in accordance with MCoA 9.2 and rehabilitation aspects are reported in section 5.

#### 4.6.2 Rehabilitation

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 or southern waste rock emplacement areas was commenced in the 2013 to May 2014 period, with reshaping and placement topsoil and rock in readiness for gypsum application and mulch prior to seeding.



**Plate 10: Rehabilitation trial on lake side overburden emplacement with contouring and using straw bale substrate to control erosion and retain soil for vegetation establishment**

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

Rehabilitation status for the latest AEMR reporting period, undertaken in accordance with the Mining Operations Plan is shown in Table 10.

**Table 10: Summary of Mine Lease Areas Disturbed/Rehabilitated**

	Area Disturbed / Rehabilitated (hectares)		
	2011	2012	2013
<b>A MINE LEASE AREA</b>			
A1 Mine Lease(s) Area	2,650	2,650	2650
<b>B DISTURBED AREAS</b>			?
B1 Infrastructure Area <sup>1</sup>	350	350	355
B2 Active Mining Area <sup>2</sup>	107	107	107
B3 Waste Emplacements <sup>3</sup>	335	342	342
B4 Tailings Emplacements	369	369	369
B5 Shaped Waste Emplacement <sup>4</sup>	62	87	96
<b>ALL DISTURBED AREAS<sup>5</sup></b>	1,223	1,255	1269
<b>C REHABILITATION PROGRESS</b>			
C1 Total Rehabilitated Area <sup>6</sup>	110	110	118
<b>D REHABILITATION ON SLOPES</b>			
D1 10 – 18 Degrees	110	110	118
D2 Greater than 18 Degrees	0	0	0
<b>E SURFACE OF REHABILITATED LAND</b>			
E1 Pasture and Grasses	151	151	151
E2 Native Forest/Ecosystems	38	38	46
E3 Plantations and Crops	0	0	0
E4 Other	0	0	0

<sup>1</sup> Includes areas such as ore and soil stockpiles, contained water storages, processing plant and roads.

<sup>2</sup> Open pit area.

<sup>3</sup> Areas of waste emplacements yet to be shaped and rehabilitated.

<sup>4</sup> Areas of waste emplacements that have been shaped and rehabilitated.

<sup>5</sup> Includes any area disturbed by mining activities including the Total Rehabilitation Area presented in C1.

<sup>6</sup> Any areas that have been rehabilitated including areas of waste emplacements and tailings storage facilities progressively shaped and rehabilitated.



**Plate 11: Rehabilitation trials along the southern wall of the Southern Waste Emplacement Area**

#### **4.6.4 Rehabilitation Monitoring**

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

- **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, predominantly occurring on flat to gently undulating slopes (RL 210 – 225m).

Major rehabilitation areas assessed as part of the 2013 monitoring program included rehabilitation trials undertaken on the Northern and Southern Tailings Storage Facilities (TSF) and 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 2013, presented the following conclusions:

##### **Lake Foreshore trials**

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 seed applied by hand broadcasting. The inundation of Lake Cowal in 2010 resulted in a significant increase in floristic diversity.

The ecological data obtained from the lake foreshore rehabilitation area indicated improved plant cover and increasing diversity and abundance of native species being recorded. In 2012 and 2013 the dry conditions had a negative impact of the perennial plant cover and in February 2014 most cover was provided by dead leaf litter.

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.

##### **Tailings Storage Facility trials**

Rehabilitation trials on the Northern Tailings Storage Facility (NTSF) and Southern Tailings Storage Facility (STSF) walls were implemented during 2009. An assessment of these areas undertaken during March 2010 recorded each treatment to determine which treatments were more effective and those that had failed. The treatments selected were:

1. NTSF01: Rock mulch and topsoil on the northern TSF; and
2. NTSF02: Topsoil (2009) + Wheaten Hay (2010) on the northern TSF; and
3. STSF01: Rock Ribbon and wheaten hay on the southern TSF.

Both NTSF trial sites were ecologically functional grasslands and in 2013 fell within stability, infiltration and nutrient recycling targets provided by the local native grassland communities. The site on the STSF continued to improve.

All rehabilitation sites had moderate to strongly alkaline soils and a high Cation Exchange Capacity (CEC), were sodic and low in organic matter and phosphorous.

In conclusion, sites situated on both the NTSF and STSF have performed relatively well and despite not meeting all completion targets, the sites are immature and have much ecological development to undertake and have demonstrated significant increases in many ecological attributes over the 2012 to 2014 period.

### **Southern Offset Area**

The two Southern Offset monitoring sites were ecologically very stable due to the relatively high levels of litter largely derived from dead annual plants. The soil properties remained within the local or desirable levels but were both low in organic matter, and in the Offset02 quadrant, the soils continued to be sodic.

### **Northern Offset Area**

The two Northern Offset monitoring sites demonstrated a decline in ecological function in 2013, however this reduction was also evident within the natural slope and floodplain communities as a result of the dry conditions. Both Offset sites fell within the stability, infiltration and nutrient recycling completion targets. The sites also demonstrated a decline in floristic diversity however site Offset03 continued to have a high diversity of native species.

### **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, however the early results indicate that better ecological stability, infiltration and nutrient recycling can be obtained by the application of a straw mulch, regardless of topsoil depth. 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 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.

### **Southern Waste Emplacement Rehabilitation Trials**

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).

Under the conditions of this trial these two treatments were very similar in the parameters that were measured but there may be additional benefits in using the underlying rock mulch which provides additional stability in the case of high rainfall or drought. especially if applied before the vegetation had become established.

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.

Conclusion from the Rehabilitation Monitoring Report (DnA 2013) was *“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.”*

#### 4.6.5 Conclusion

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 proved an ordeal on the CGM site due to the influence of the extreme weather conditions experienced (both wet during 2010-2011 and dry in 2012-2014).

Rehabilitation trials on the CGM site have continued to determine suitable substrates and procedures for the stabilisation and revegetation. The rehabilitation trials have exhibited variability of results of vegetative establishment on the blends of rock, subsoil, gypsum and mulches, and the results of the trials have also been affected by the weather conditions experienced during the 2010 to May 2014 period.

The rehabilitation targets outlined in the MOP and reported in the AEMR's have generally not been met due to the influence of the extreme weather conditions on the establishment and succession of growth, however improvement was noted during this audit with the activities undertaken between May 2013 and May 2014 increasing the area of reshaped land where disturbance has been completed and the revegetation of these areas commenced to address the rehabilitation targets in the MOP.

#### Recommendation 2

The waste rock emplacements that have reached the areal and height criteria approved in the MOP and the Cowal Gold Project Environmental Assessment, should continue to be progressively reshaped and have the proven blends of rock, subsoil, gypsum, mulch and seed mixture (identified by the rehabilitation trials) applied, when the weather conditions are conducive with seed germination and establishment of a stabilising cover crop to meet the rehabilitation targets expressed in the MOP and AEMR predictions.

### 4.7 Bushfire Management

[Minister's Condition of Approval 3.8]

#### 4.7.1 Bushfire Management Plan



The Bushfire Management Plan required under MCoA 3.8 was approved by DIPNR in 2003. The Plan was reviewed during 2009. The Bushfire Management Plan 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.
	 <p><b>Plate 12: CGM Category 7 fire tenders</b></p>	 <p><b>Plate 13: CGM Emergency Response Rescue Station</b></p>
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 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: <ul style="list-style-type: none"> <li>records of maintenance works undertaken in fire trails and the date the work was undertaken;</li> <li>records of any fuel management measures undertaken and the dates the work was undertaken; and</li> <li>details of the fire history of the project area, recorded as site observations.</li> </ul>	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: <ul style="list-style-type: none"> <li>grazing, slashing, pruning, mulching or other operations;</li> <li>fuel management via burning where conventional fuel management strategies are inappropriate, impracticable or not successful; and</li> </ul>	The bushfire management measures carried out include: <ul style="list-style-type: none"> <li>creation of firebreaks around the ML 1535 boundary by slashing and grading;</li> <li>slashing of large open areas within ML 1535 with high fuel loads;</li> <li>mowing and grounds maintenance of bore-field</li> </ul>

Section/ Page No.	Bushfire Management Plan Commitments	Comments
	<ul style="list-style-type: none"> <li>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).</li> </ul>	stations; <ul style="list-style-type: none"> <li>conducting regular inspections of the ML 1535 area to identify any significant fire risks.</li> </ul>
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 Guidelines" 12 months after commencement of operations and every three years thereafter (MCoA 5.4(e)).	A Hazard Audit is conducted by Dean Shewring of Pinnacle Risk Management Pty Ltd each 3 years. 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 MCoA 9.2 includes bushfire management and actions in AEMR section 3.16.

#### 4.7.2 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 firefighting 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.

## 4.8 Land Management

[Minister's Condition of Approval 3.10(A)(i)]

### 4.8.1 Land Management Plan

[Minister's Condition of Approval 3.10(A)(i)]

The Land Management Plan prepared to satisfy MCoA 3.10(A)(i) was approved by DIPNR in 2003. A review of the Plan in 2009 indicated that a revision was not necessary as there had not been any changes to applicable guidelines, environmental requirements or operational practices that would necessitate a revision/update of the Plan. The Land Management Plan outlines the management strategies and measures for all of the Barrick land holdings.

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 unimpeded 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 LWMP, 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 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.	Pasture renovation or re-establishment, and paddocks suitable for harvesting have been implemented at Hillgrove and Corringale properties.

Section/ Page No.	Land Management Plan Commitments	Comments
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 LWMP/LC 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 minimise the occurrence of feral pests; and limiting vehicular access.	Management measures to protect the compensatory wetland areas have been implemented in accordance with the Compensatory Wetland Management Plan.
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:	Remnant vegetation monitoring is conducted annually by DnA

Section/ Page No.	Land Management Plan Commitments	Comments
	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).	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/Ilyrian Thistle, Silverleaf Nightshade, Spiny Burrgrass, St. Johns Wort, Wild Rash) in accordance with the Lachlan Valley Noxious Weeds Advisory Group weed management plans. The weed management plans are provided in LMP Appendix B.	Annual weed surveys and farm management assessment has been conducted by Carnegie Natives. 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. 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. 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 Barrick owned properties.
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.



Section/ Page No.	Land Management Plan Commitments	Comments
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.
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 submit 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: <ul style="list-style-type: none"> <li>• Section 5 Barrick-owned land under license agreements</li> <li>• Section 3.9 weed and pest control</li> <li>• Section 3.7 – Flora - remnant vegetation management monitoring</li> </ul>

### 4.8.3 Remnant Vegetation Enhancement Program

DnA Environmental conduct 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 2013 survey (Hill01, Hill02, Hill03, Hill04, RVEP3 and RVEP RVEP4).

The wet weather that commenced in 2010 resulted in the inundation of Lake Cowal and water levels in Lake Cowal remained at very high with a peak flood event occurring March 2012. Since March 2012 there has been limited rainfall and most of 2013 was very dry with only 341.6mm recorded. This low rainfall has had a significant impact on the floristic diversity and composition in the remnant vegetation areas. The Lake water level has continued to recede and at the time of remnant vegetation monitoring (4-8<sup>th</sup> November 2013) the water was at RL 204.7m.

There have been overall minor changes in the mature tree populations with sites Hill01 and Hill03 on Fellman's Hill exhibiting medium density regrowth dominated by *Eucalyptus dwyeri* (Dwyer's Red Gum). Sites RVEP3 and RVEP4 are open woodland containing scattered old growth *E. camaldulensis* trees along the western foreshore and southern floodplain of Lake Cowal.

No consistent trend in changes in total ground cover have been noted since 2008 but typically most sites have demonstrated an overall improvement as a result of reduced grazing pressure combined with better seasonal conditions on Hill02 and Hill04 sites.

The prolonged dry conditions in 2012-2013 resulted in increased macropod grazing in some sites, especially Hill01 and Hill03. Within Hill02, the fenced enclosure has demonstrated that heavy macropod grazing can have significant effects on the recovery and health of the woodland vegetation. In the more open grassland areas the impacts were relatively minor and macropod grazing in these grassland areas is likely to be desirable to reduce herbage biomass, encourage new plant growth and maintain species diversity.

#### 4.8.4 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).

### 4.9 Compensatory Wetland Management

[Minister's Condition of Approval 3.10(A)(ii)]

#### 4.9.1 Compensatory Wetland Management Plan

The Compensatory Wetland Management Plan required under MCoA 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).

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: <ul style="list-style-type: none"> <li>the prevention of stock entry into the enhancement area to encourage the natural regeneration of native plants;</li> <li>measures to minimise the spread of weeds and competition with native flora;</li> <li>measures to minimise the occurrence of feral pests;</li> <li>provision of structural habitat for aquatic fauna; and</li> <li>limiting vehicular access.</li> </ul>	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 survey results indicate enhancement of the compensatory areas can be achieved.
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 contingency measures (such as the requirement for the planting of native species and weed/pest control).	
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.	

Section /Page No.	Compensatory Wetland Management Plan Commitments	Comments
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.	Carnegie Natives carries out 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 Barrick-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.
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.

Section /Page No.	Compensatory Wetland Management Plan Commitments	Comments
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.	Annual fish surveys have been conducted by frc environmental, since the filling of Lake Cowal in 2011.
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, identification of 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: <ul style="list-style-type: none"> <li>• supplementary plantings to replace any losses;</li> <li>• control of erosion and sedimentation;</li> <li>• the use of tree guards to provide protection against wind, frost, vermin and herbivores;</li> <li>• weed and pest control; and</li> <li>• limiting vehicle access</li> </ul>	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, environmental protection authority, NPWS, BSC and to the satisfaction of the Director-General.	Noted. Yet to be commenced.
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 MCoA 9.2 address compensatory wetland management in section 3.7.

#### 4.9.2 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 February 2014 concluded:

*“The compensatory wetland regeneration monitoring has been undertaken to monitor changes in vegetation cover, species diversity and to determine the extent of regeneration if any, occurring within the main wetland areas within the Mining Lease.*

*Due to above average rainfall conditions since 2010 which resulted in the inundation of Lake Cowal, only two of the twelve compensatory wetland monitoring sites have been assessed during 2010 to 2014.*

*Sites CW3 and GW1 are located on the Lake Cowal foreshore and due to flooding of the lake these sites have undergone a significant transformation due to partial inundation, the receding water and substantial deposition of sand and vegetative debris. These effects resulted in a decline in total ground cover, especially at site CW3.*

*There was considerable movement of large logs and branches around site GW1. There continued to be healthy population of skinks that inhabit the fallen branches and leaf litter indicating the importance of retaining these components as critical habitat requirements.*

*Annual exotic species were abundant at both sites and had taken advantage of the disturbed and moist foreshore areas as the lake waters recede. Both sites exhibited significant recruitment with seedlings of *E. camaldulensis* and *Glycyrrhiza acanthocarpa* common along the receding lake foreshore area.*

*The permanent photo points and general area photographs show a marked improvement in tree health in most areas around the Lake Cowal environment. The majority of areas that were typically subjected to high grazing pressure around the leased grazing lands in the past have significantly improved levels of ground cover due to a reduction in total grazing pressure.*

*In conclusion it appears grazing pressure and climatic influences have had a dramatic influence on the wetland communities with the early results indicating that improved management in the grazed wetland areas is required, particularly during the very dry years. The lake foreshores have provided a dynamic environment as a result of flood waters and active wave action and these have had a significant influence on the structure and composition of the two lake foreshore communities as quantified by the annual monitoring program."*

#### 4.9.3 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.

### 4.10 Water Management

[Minister's Condition of Approval 4.1/4.2]

#### 4.10.1 Site Water Management Plan

The Site Water Management Plan was prepared to satisfy the requirements of MCoA 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 includes 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 Condition 8.2(a)(iii).

The consolidated revision of the Site Water Management Plan was completed in November 2010 following receipt of comments from NoW and DECCW. The Site Water Management Plan was further revised and submitted to DP&I in February 2012. Comments were received by Barrick from DP&I on 14 August 2012. The Site Water Management Plan was further revised in August 2014 and submitted to DP&I. No response had been received by Barrick from DP&I in relation to approval of the Plan at the date of this audit (May 2014).

Commitments in the Site Water Management Plan are listed in Table 14.

**Table 14: Site Water Management Plan Commitments.**

Section / Page No.	Site Water Management Plan Obligations	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 drainage system, Up-Catchment Diversion System, 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	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.

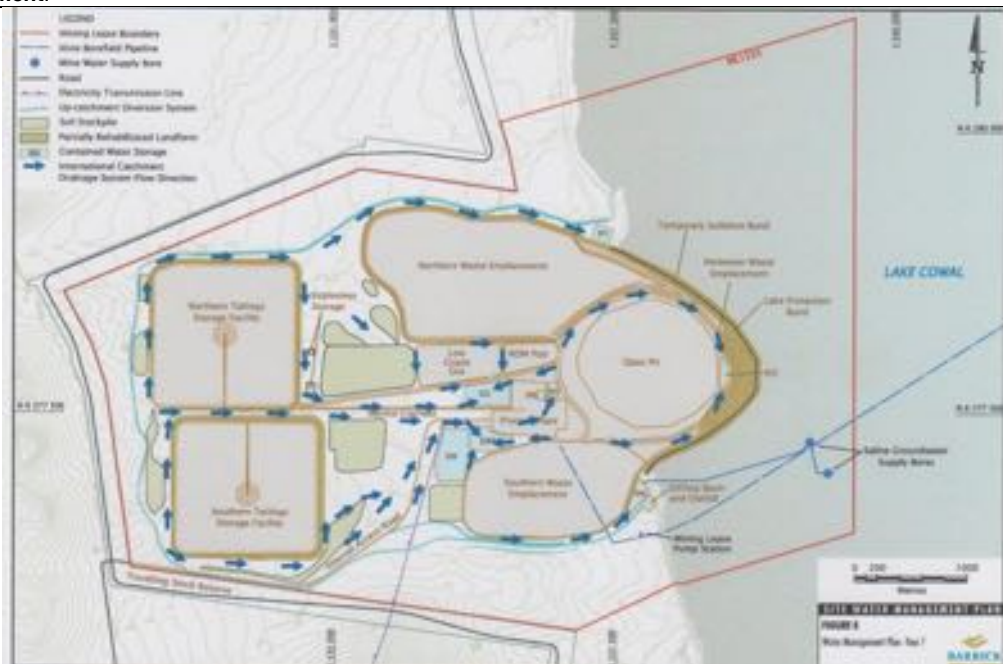


Section / Page No.	Site Water Management Plan Obligations	Comments
	water storages for CGM runoff comprise storages D1, D2, D3, D4, D5, D8A and D8B. Contained water storages D1 to D5, D8A and D8B will be used to contain runoff from the waste emplacements and general site area. Water will be pumped to contained water storages D6 or D9 (process water storages) for consumption during ore processing.	Toe drains and contained water storages, D2, D3, D8A and D8B were constructed in stages 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.
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 generally demonstrated CN <sub>WAD</sub> levels of less than 20mg/L. Cyanide levels in the D6 storage are also less than the 20mg/L CN <sub>WAD</sub> 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 held 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 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).	The up-catchment diversion system was constructed to simulate endemic drainage features of the prevailing hydrological regime. The up-catchment diversion system has been constructed with rock stabilisation barriers to control flow rates down the channel following rainfall events.

Section / Page No.	Site Water Management Plan Obligations	Comments
	 <p><b>Plate 16: Up-Catchment diversion drain with rock stabilisation for flow control</b></p>	 <p><b>Plate 17: Ephemeral drainage line stabilisation – part of natural sequence farming process</b></p>
s.4.1.2/p28	<p>The lake isolation system has been designed to hydrologically separate the open pit and Lake Cowal during Project development, mining and post-closure (North Limited, 1998a).....</p>	<p>The constructed lake isolation system comprises a series of isolation embankments 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:</p> <ul style="list-style-type: none"> <li>• temporary isolation bund;</li> <li>• lake protection bund; and</li> <li>• perimeter waste emplacement.</li> </ul>

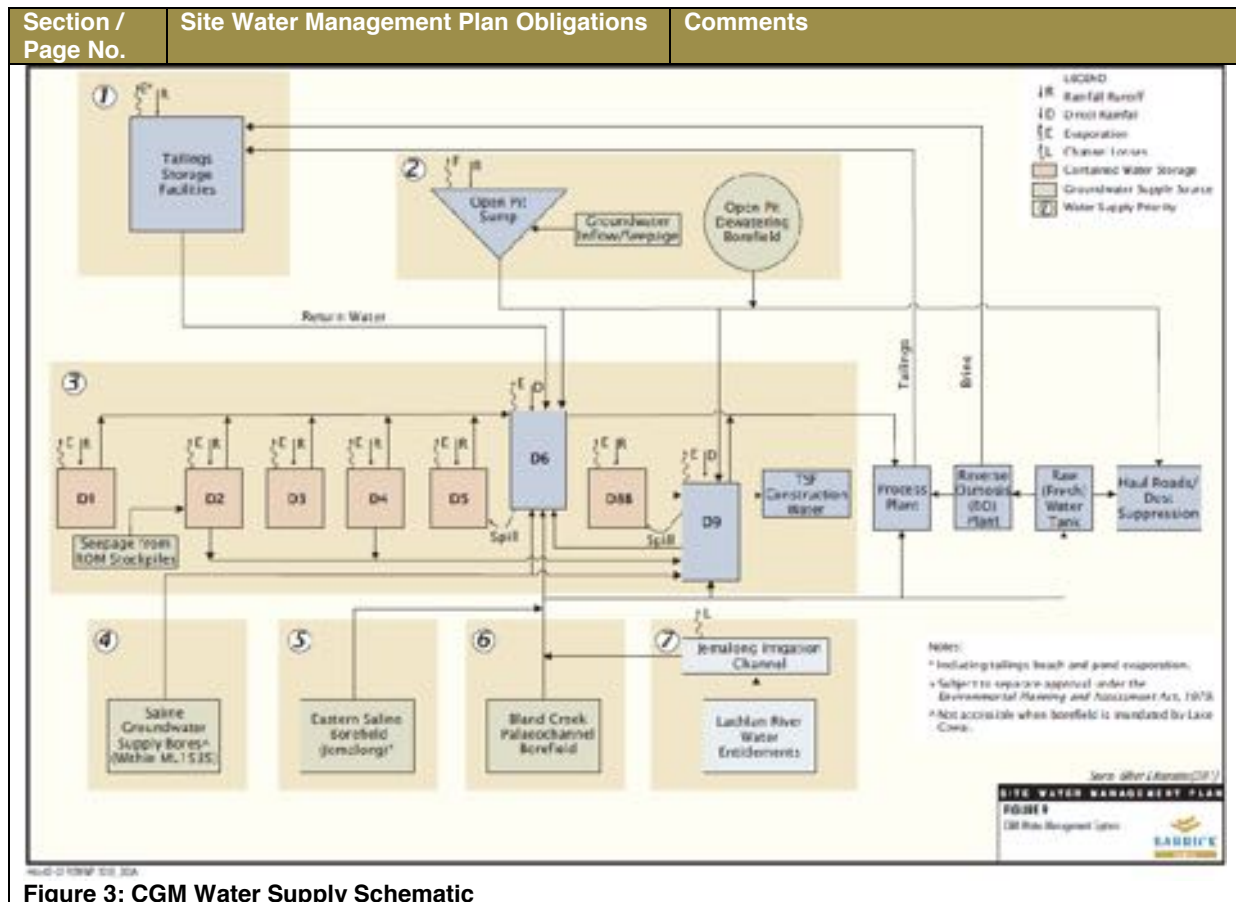


**Plate 18: Cowal Gold Mine pit showing temporary isolation bund, lake protection bund and perimeter waste emplacement.**




**Figure 2: Surface water management for the CGM site**

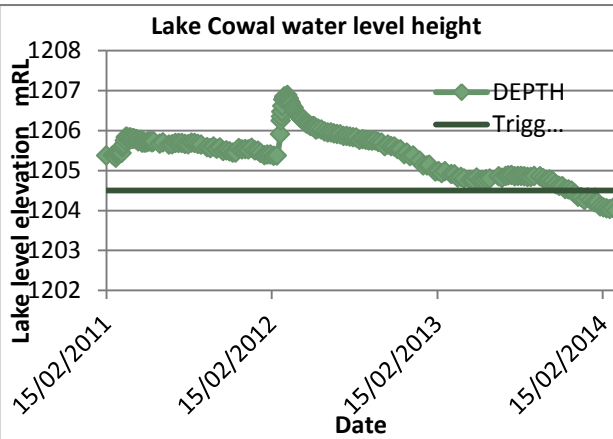

Section / Page No.	Site Water Management Plan Obligations	Comments																		
s.4.1.2/p29	The temporary isolation bund is a short-term feature that will be used to isolate the pit from the lake during the construction phase while the lake protection bund is constructed. Accordingly, once the lake 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 (when Lake Cowal was dry) to isolate the pit from the lake waters (if the lake filled during this construction period), while the lake protection bund was constructed. Barrick have undertaken to raise the temporary isolation bund by 0.5 m following inundation in February 2012 (during the Lake Cowal inundation).																		
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 has been constructed to prevent water inflow (during periods of high lake water level) from the lake into the open pit development area.																		
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 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.	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.																		
s.4.1.3/32	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.	Surface water collected within the limits of the Internal Catchment Drainage System is directed to the process water storage dam (D6) for use in the process plant.																		
s.4.1.4/p32	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).	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 ESCMP).																		
s.4.2.1/40	The quantity of water approved for extraction from the Bland Creek Palaeochannel is 15ML/d and 3,650 ML/annum (MCoA 4.4(a)).	<table><tr><th>Year</th><th>Annual Water extraction from Bland Creek Palaeochannel Bore-field</th></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><tr><td>2007</td><td>1666 ML</td></tr><tr><td>2006</td><td>3263 ML</td></tr></table> <p>The water extraction from the Bland Creek Palaeochannel bore-field has not exceeded 15 megalitres (ML)/day or 3650 ML/year, between 2006 and 2014.</p>	Year	Annual Water extraction from Bland Creek Palaeochannel Bore-field	2013	1379 ML	2012	1080 ML	2011	696 ML	2010	1089 ML	2009	2053 ML	2008	1658 ML	2007	1666 ML	2006	3263 ML
Year	Annual Water extraction from Bland Creek Palaeochannel Bore-field																			
2013	1379 ML																			
2012	1080 ML																			
2011	696 ML																			
2010	1089 ML																			
2009	2053 ML																			
2008	1658 ML																			
2007	1666 ML																			
2006	3263 ML																			





Section / Page No.	Site Water Management Plan Obligations	Comments
 <p><b>Plate 19: CGM open pit dewatering sump. Dewatering borefield is located external to the perimeter of the open pit.</b></p>		
4.2.5/p52	The process plant area has been bunded and graded such that 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.
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 and Administration Complex in the 1st quarter 2006 in accordance with the requirements of the Department of Health.
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 MCoA 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 handling of samples to ALS (NATA registered laboratory) for analysis is conducted using sample containers and preservation requirements in accordance with Section 4 of the relevant Part (Parts 4, 6, 10 and 11) of AS/NZS 5667: 1998, relevant to the parameters to be measured for dispatch in Esky(s) to the laboratory. 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 (MCoA 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 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.



Section / Page No.	Site Water Management Plan Obligations	Comments
		
<p><b>Figure 4: Lake Cowal Water Levels February 2011 to February 2014</b></p>		
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 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 AEMR, EPA/ DECC/OEH, DP&I and DTIRIS.
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 programme (where those sites are still operational). OoW and DECCW 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 have been obtained under Part 5 of the <i>Water Act, 1912</i> .
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 SWGWBMP.
s.4.3.6/p64	Development Consent 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.	<p>This program was prepared prior to the commencement of construction in consultation with the OoW 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.</p> <p>Monitoring 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.</p>

Section / Page No.	Site Water Management Plan Obligations	Comments
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 or aggravate air pollution, 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 obtained by Barrick.
s.6.2.2/p74	The groundwater resource contained within the Bland Creek Palaeochannel is currently partially utilised by landholders in the area for irrigation and stock watering purposes. To monitor important background and predicted future water level draw-downs, monitoring piezometers have been installed. (The actual number and location of piezometers is presented in SWGMBMP). 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).	In the event that the groundwater level in GW036553 was below RL 137.5 m AHD, one or more of the following contingency measures would be implemented in consultation with the OoW: <ul style="list-style-type: none"> <li>• investigate the groundwater level in the Trigalana bore (GW702286) or any other impacted stock and domestic bores;</li> <li>• determine the pump setting in relevant stock and domestic bores;</li> <li>• determine the drawdown rate in GW702286 and other impacted stock and domestic bores;</li> <li>• develop an impact mitigation plan for impacted stock and domestic bores; and/or</li> <li>• set up an alternative water supply for the owner of GW702286 and other owners of stock and domestic bores, if necessary.</li> </ul> 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 OoW: <ul style="list-style-type: none"> <li>• alter the pumping regime to maintain the water level in the impacted stock and domestic bores; or</li> <li>• maintain a water supply to the owner/s of impacted stock and domestic bores.</li> </ul>
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 and actions to be implemented were agreed in consultation with the OoW. 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 reused on site in the process plant.
s.11/p.84	In accordance with Development Consent Condition 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	Not yet required. The decommissioning plan for the CGM Project will be prepared five years before mine closure.

Section / Page No.	Site Water Management Plan Obligations	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) have been prepared by CGM in accordance with MCoA 9.2. The site water components are reported in the AEMR section 3.3.

#### 4.10.2 Water Monitoring and Water Balance Performance

The Site Water Management Plan has been implemented with all water management ponds constructed on the CGM site and surface water drainage structures completed for the CGM development.

- The Operational Water Budget is subject to annual review and revision by process plant staff.
- A total of 1379 mega-litres (ML) of water was extracted from the Bland Creek Paleochannel during January and December 2013 and zero (0)ML from the eastern saline bore-field during May 2013 to May 2014. Jemalong Irrigation extraction under Water Access Licences was 1102.1 ML in 2013 and 643.2 up to May 2014.
- The E42 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 for plant ore treatment via Pond D6 and also for dust control on E42 Pit and TSF haul roads.
- The Short Term Strategy and matters implemented under the Medium-Long Term Strategy water management strategy have been regularly surveyed at the bore-field to determine if any measurable ground movement is occurring. Groundwater levels and quality data are monitored by an independent consultant. No discernible ground movement has been recorded.
- A groundwater level contingency plan was agreed between Barrick and DNR on 13 September 2006 as an interim measure. The Plan involved the agreement of trigger levels in borehole GW036553 of 137.5m AHD for water drawdown management actions, and actions to occur at 134m AHD for alternative water supply to impacted S/D bores if the drawdown reached the trigger values. Current water extraction from the Paleochannel bore-field sites is less than previous years and to date predicted guidelines for groundwater levels have been met with no exceedence of the trigger levels. Automatic loggers are installed in both monitoring bores and production bores. Due to the high lake water levels during 2011-2014, the lake floor saline bores were packed and infrastructure removed.
- 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 EPA 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.
- Barrick contracted independent consultants Coffeys Geotechnics to review the collected groundwater monitoring data and to produce hydro-chemical diagrams following analysis of the information. The groundwater quality results and trends reported in this assessment illustrate that the water management control measures for full containment of mine site water and control of runoff from the TSF and waste rock emplacements appear to 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.”
- EPL trigger rainfall monitoring events (i.e. >20mm/24hrs) for the surface water monitoring program occurred on the following dates between May 2013 and May 2014 and surface water monitoring was conducted in accordance with the Site Water Management Plan monitoring program:

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

- Surface water sampling in Lake Cowal (i.e. points 14-18) and stormwater quality monitoring (points 12-13) occurred following rainfall events during May 2013 to May 2014.
- 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 2013*”.
- The results of the surface water monitoring reported for 2013 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 Lake Cowal surface water quality results against the baseline water quality results from 1991 – 1992 and 2010-2012 indicates that the 2013 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) indicates 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 2013 extractable results were below the recommended trigger values and are similar to the 2010, 2011 and 2012 monitoring results. Overall Lead and Zinc levels have decreased slightly from data previously recorded in 2012

#### 4.10.3 Conclusion

The Site Water Management Plan prepared to satisfy MCoA 4.1/4.2 provides an adequate program for the management of water use by the CGM project and is controlling the surface water runoff from the disturbed areas of the CGM site that protecting the water quality in Lake Cowal. A revised Site Water Management Plan was lodged with DP&I on 17 February 2012 and August 2013. Barrick was still awaiting approval of the revised Site Water Management Plan from DP&I at the date of this audit.

Water monitoring has been conducted in accordance with the Site Water Management Plan and Surface Water, Groundwater, Meteorological and Biological Monitoring Program and monitoring data has been reviewed by independent consultants. The monitoring data did not exhibit results that indicate a connection between the closed catchment of the CGM operations and the waters of Lake Cowal. Extraction of water from the Bland Creek Paleochannel bore-field and water obtained from the Lachlan Regulated River Water Source did not exceed the allowable extraction rates or volumes during the May 2013 and May 2014 period.

## 4.11 Cyanide Management

[Minister's Condition of Approval 5.3]


### 3.11.1 Cyanide Management Plan

The Cyanide Management Plan prepared to satisfy MCoA 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.


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.	<p>Delivery of cyanide on site takes place in a controlled area within a concrete-bunded area.</p>  <p><b>Plate 19: Cyanide delivery on bunded concrete area with high visibility signage.</b></p>
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	<p>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</p>



Section / Page No.	Cyanide Management Plan Commitments	Comments
	the containment. Any aspects requiring maintenance or repair will be noted and records documenting the inspection and corrective measures will be kept.	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 <sub>WAD</sub> levels of the aqueous component of the tailings slurry stream will be maintained so that they do not exceed 20 mg/L CN <sub>WAD</sub> (90 percentile over six months) and 30 mg/L CN <sub>WAD</sub> (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 <sub>WAD</sub> 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 <sub>WAD</sub> (90 percentile over six months) or 30 mg/L CN <sub>WAD</sub> (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.
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.	 <b>Plate 20: Tailings delivery/return water lines in a bunded pipeline corridor between the process plant and tailings storage facilities.</b>
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	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

Section / Page No.	Cyanide Management Plan Commitments	Comments
	used within the processing plant. The decant system (including access causeway) will be progressively raised during the development of the tailings.	 <p><b>Plate 21: Causeway to the decant tower on Southern Tailings Storage Facility.</b></p>
s.4.2.3.4/p.15	<p>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:</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<p>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 by DII-MR and DII-Agriculture during the AEMR / MOP review process).</p> <p>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.</p>
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 <sub>WAD</sub> 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 <sub>WAD</sub> 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 <sub>WAD</sub> 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	<p>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).</p> <p>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</p>

Section / Page No.	Cyanide Management Plan Commitments	Comments
	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-1677 requirements. The results of the Orion Instruments Analytical CN Solution TM FS 3100 analyser will be verified by the off-site laboratory analysis.	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.
s.6.2.3.2/p.18	CN <sub>WAD</sub> 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 for the life of the Project.	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 <sub>WAD</sub> 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 (or delegate).	Monitoring data for CN <sub>WAD</sub> and CN <sub>FREE</sub> 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 <sub>FREE</sub> levels at locations where employees are operating. The on-line (i.e. ambient) monitoring of HCN gas that will be undertaken with regard to employee safety	The ambient monitoring of CN <sub>FREE</sub> 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 <sub>WAD</sub> levels will be undertaken at a network of groundwater monitoring bores to monitor cyanide movement beneath and adjacent to the tailings storages, namely: <ul style="list-style-type: none"> <li>• down-gradient bores P412 A &amp; B, P414 A &amp; B, P418 A &amp; B;</li> <li>• up-gradient bores P555 A &amp; B, P558; and</li> <li>• tailings storage monitoring bores MON-01 and MON-02.</li> </ul>	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 <sub>WAD</sub> in accordance with EPL 11912. The	

Section / Page No.	Cyanide Management Plan Commitments	Comments
	CN <sub>WAD</sub> results that are obtained for the groundwater bores will be recorded and retained as required by EPL 11912.	 <p><b>Figure 6: Groundwater bores for monitoring Cyanide (CN<sub>WAD</sub>).</b></p>
s.7/p.22	Consent Condition 5.3(b) requires the CMP to provide contingency measures for reducing cyanide levels.	<p>The Cyanide Management Plan section 7.1 provides contingency measures for:</p> <ul style="list-style-type: none"> <li>• reduction of HCN levels in areas where employees are operating;</li> <li>• section 7.2 provides contingency measures for reducing CN<sub>WAD</sub> levels in the event CN<sub>WAD</sub> 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,</li> <li>• 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</li> <li>• section 7.4 describes the process for EPA review of cyanide levels in the event of wildlife deaths occurring due to cyanide.</li> </ul>
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).	<p>Annual Environmental Management Reports (AEMR) have been prepared by CGM in accordance with MCoA 9.2.</p> <p>The cyanide management and monitoring program results are reported in the AEMR section 3.5.</p>
s.9.3/p.29	In accordance with Consent Condition 8.2(b)(i), any CN <sub>WAD</sub> 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 <sub>WAD</sub> will be assessed daily (to ensure that CN <sub>WAD</sub> 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.	<p>The cyanide levels in the slurry stream have not exceeded &lt;20mg CN<sub>WAD</sub>/L (90%ile) between May 2013 and May 2014.</p> <p>Cyanide monitoring results have been forwarded to the DP&amp;I, DRE and OEH monthly, and to the CEMCC quarterly between May 2013 and May 2014.</p>

Section / Page No.	Cyanide Management Plan Commitments	Comments
s.10.1/p.30	<p>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.</p> <p>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, "<i>Hazard Audit Guidelines</i>".</p>	<p>A Hazard Audit was conducted by Dean Shrewring 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.</p> <p>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 and 12 April 2013.</p>

#### 4.11.2 Cyanide Monitoring

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

During the May 2013 to May 2014 operational period no results exceeded the 20mg CN<sub>WAD</sub>/L level (and no results exceeded the maximum 30mg CN<sub>WAD</sub>/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 2013 to May 2014 period. Recorded cyanide concentrations in the tailings facilities were below the level that would be expected to cause mortality throughout the reporting period.

One death (silver gull) occurred in November 2013 near a bund at the process plant and the autopsy results indicated the presence of cyanide in the eye fluid sent of analysis to the IDEXX Laboratories. The gull was found within the fenced area near the sump in the bund

No other wildlife deaths attributable to cyanide were recorded between May 2013 and May 2014.

#### 4.11.3 Conclusion

The Cyanide Management Plan required under MCoA 5.3(b) and subsequent addenda have been 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 2013 and May 2014 no cyanide results exceeded the 20mg CN<sub>WAD</sub>/L or the maximum 30mg CN<sub>WAD</sub>/L level. Donato Environmental Services reported on wildlife visitation to the tailings storage facilities and noted that the monitored cyanide concentrations were all below the level that would be expected to cause mortality.

### 4.12 Hazardous Waste and Chemical Management

[Minister's Condition of Approval 5.7]

#### 4.12.1 Hazardous Waste and Chemical Management Plan

The Hazardous Waste and Chemical Management Plan was prepared to satisfy MCoA 5.7 and approved by the Director-General in 2003. The Hazardous Waste and Chemical Management Plan



was revised and updated in March 2006. Addenda to the Hazardous Waste and Chemical Management Plan have occurred related to:

- 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<sub>2</sub>) 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.

#### 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 Barrick 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 Conclusion

The Hazardous Waste and Chemical Management Plan provides the processes and procedures implemented 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 MCoA 5.4, the CGM Emergency Response Management Plan and CGM Safety Management System. All wastes generated on site are managed under a waste management 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. The management procedures and protocols have resulted in best practice for any chemicals transported to, stored and/or used on the CGM site.

## 4.13 Dust Management

[Minister's Condition of Approval 6.1]

### 4.13.1 Dust Management Plan

The Dust Management Plan prepared to satisfy MCoA 6.1 was approved by DIPNR in 2003. The Dust Management Plan dust deposition monitoring sites were amended in August 2007 and approved by DIPNR. An addendum to the Dust Management Plan related to the location of monitoring site DG2 submitted to DIPNR in December 2008 and approved in February 2009.

The Dust Management Plan has been 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.

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.
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 McIntock 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 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

Section/ Page No.	Dust Management Plan Commitments	Comment
		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 database. Results will be analysed and reviewed for comparison with respect to monitoring program.	All dust deposition, TSP and meteorological monitoring data is retained in the Barrick 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.

### 3.13.2 Dust Monitoring

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 MLA. The review and interpretation of the dust monitoring data for CGM is conducted in accordance with requirements of the Dust Management Plan by Dr Stephen Cattle of the University of Sydney.

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

**Table 18: CGM Dust monitoring sites (outside the MLA)**

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
I5	General monitoring site

**Table19. Dust monitoring sites inside the CGM MLA**

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

- 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 University of Sydney depositional dust gauges and six (6) dust Frisbees was suspended due to access problems and inundation.
- Temporal and spatial variation in monthly dust deposition in 2013 was lower than in 2012 with moderate correlation between monthly dust deposition and season in 2013.
- Compliance with the dust deposition average annual assessment criterion of 4 g/m<sup>2</sup>/month was achieved at 13 of 14 gauges outside the ML during 2013. Compliance was achieved at all residences and bird-breeding and native fauna areas (i.e.DG1, DG2, DG4, DG6, DG7, DG8, DG9, DG10).
- For the single gauge external to the ML that exceeded the assessment criterion of 4 g/m<sup>2</sup>/month (DGI5), the cause of the exceedence was three sampling periods with dust deposition of more than 10 g/m<sup>2</sup>. (For each of these three deposits, more than 70% of the material was combustible matter, suggesting a large contribution of insects, bird droppings and vegetative matter to those deposits.
- Exclusion of the combustible fractions of these dust deposits would result in the annual average dust deposition rate for DGI5 below the assessment criterion).
- The HVAS, located to the north of the ML area, indicated an annual TSP level of 44 µg/m<sup>3</sup> during 2013 for all samples which is less than the relevant NSW EPA amenity criterion of 90 µg/m<sup>3</sup>.
- The dust metal data collected from 2013 gauge samples show mean Al values less than typical soil and regolith materials, As, Cd, Pb and Se values generally typical of regolith materials, and Cu and Zn values greater than mean values for typical regolith materials. The Site 52 gauge, located inside the ML area and downwind (northeast) of the mine, recorded slightly elevated mean concentrations of As, Cd and Pb, suggesting a minor role of mine-derived dust in metal transport.
- Mean Cu and Zn concentrations measured in the 2013 dust samples has been assumed are due to either contamination or a measurement issue as has been the case in previous years.
- No complaints about dust were received from surrounding land owners between May 2013 and May 2014.

#### 4.13.3 Conclusions

The Dust Management Plan prepared to satisfy MCoA has been implemented for the CGM operations and the dust data collected is reviewed annually by Dr Stephen Cattle of University of Sydney. Management of dust generation occurs in accordance with the Dust Management Plan and compliance was achieved at all residences and bird-breeding and native fauna areas. No complaints in relation to dust were received by CGM between May 2013 and May 2014.

## 4.14 Blast Management

[Minister's Condition of Approval 6.3]

### 4.14.1 Blast Management Plan

The Blast Management Plan was prepared to satisfy the requirements of MCoA 6.3 and approved by DIPNR in 2003. An Addendum to the Blast Management Plan (related to the location of a monitoring site BM04) was approved by DoP in April 2009.

The approved Blast Management Plan was activated when blasting commenced at the CGM in September 2005.

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 be 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.
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 (MCOA 8).	The Blast Management Plan was updated in May 2010. Revision of internal blasting practices is a continuing improvement activity. New SAROS Blast Hub technology has been installed with event logging when blast overpressure >115 dB(L) is triggered. Wind is generally the spurious blast event cause. Greater than 95 dB(L) over-pressure results have resulted from ambient wind on Sundays and Public Holidays. Detection of blast overpressure is being enhanced with the installation of next generation loggers since mid-2012 flood recovery works. SAROS intends to install next generation ancillary equipment that includes anemometers & wind direction measurements into the new loggers to better identify any localised environmental factors.
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:	All employees have access to CGM weather station data via employee login. During 2012 the Katron real-time lightning detection array system was purchased for the



Section/ Page No.	Blast Management Plan Commitments	Comments
	<ul style="list-style-type: none"> <li>assist in the prediction of noise, dust and blast impacts at nearby residences/bird breeding areas; and</li> <li>to provide data at the time of each blast as part of the blast design iterative process (MCoA 8.1)</li> </ul>	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 2013-2014 period by the ongoing independent observations of bird breeding areas conducted in January, August and October 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 occur January, August and October each year by Professor Peter Gell and Paul Peake have occurred.
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 2014.
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)).	<p>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).</p> <p>No mitigation measures have been required by EPA/NPWS between 2013 and 2014.</p>
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 been occurring since mid-2011. New Saros Blast Hub technology has been installed with event logging when > 115 dB(L) is triggered. Detection of blast overpressure by newer 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 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 MCoA 9.2 address Blast management and overpressure/ vibration in AEMR section 3.10.

#### 4.14.2 Blast Monitoring

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:

- BM01 - Gumbelah residence and BM03 - Coniston Residence are categorised as 'residence on privately owned land'.
- BM02, BM04.1, BM05, BM06 and BM09 are positioned to assess the impacts on and around Lake Cowal.
- BM07 – Administration and

- BM10 Near Field Monitor

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 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 levels were compliant with the MCoA 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 115dB(L)).

Data for a total of 479 blasts during 2013 and 109 blasts between January and March 2014 indicated:

- 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;
- Five (5) blast related events exceeded the 95dB(L) level on Sundays and Public Holidays (refer to Tale 18). These exceedences of greater than 95 dB(L) over-pressure resulted from ambient wind speed and direction on Sundays and Public Holidays (as determined by meteorological data and assessed by The SAROS Group).

**Table 18: Blast Monitoring Exceedences January 2013 to March 2014**

<b>Blast Monitoring Exceedences January 2013 to March 2014</b>		
<b>Overpressure Exceedence</b>	<b>Location</b>	<b>Date</b>
BM01 (95.9dB(L))	BM01-Gumbelah Residence	Sunday, 7 July 2013
BM06 (98.8dB(L))	BM06-General Monitoring	Wednesday, 1 January 2014
BM01 (101.0dB(L))	BM01-Gumbelah Residence	Sunday, 26 January 2014
BM01 (95.9dB(L))	BM01-Gumbelah Residence	Sunday, 2 February 2014
BM01 (98.8 dB(L)), BM02 (97.5dB(L)), BM04.1 (98.8dB(L)), BM05 (95.9dB(L))	BM01 - Gumbelah Residence, BM02 – Hillgrove Residence, BM04.1 - Northern Bird Breeding, BM05 – Southern Bird Breeding area	Sunday, 9 March 2014

- 100% of ground vibration results were compliant with MCoA 6.3(a), EPL conditions L7.3 and L7.4, and Mining Lease condition 27 (i.e. ground vibration (peak particle velocity) to be less than 5mm/s).
- Blast complaints received between May 2013 and May 2014 were investigated and it was demonstrated that the blast overpressure from each event did not exceed the blast criteria.

#### **4.14.3 Conclusion**

The Blast Management Plan was prepared to satisfy MCoA 6.3 and the management of blasting has been undertaken in accordance with the Blast Management Plan. The Blast Management Plan required under MCoA 6.3 was revised in May 2010 and submitted to DP&I. Barrick was awaiting written approval from the DP&I of the May 2010 revision at the time of this audit (i.e. May 2014).

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).

Blast overpressure and vibration monitoring has demonstrated compliance of all blasts conducted during weekdays and Saturdays with the criteria specified in the MCoA/EPL/ML conditions.

Exceedence of the 95dB(L) Sundays and Public Holidays criteria (MCoA 6.3(a)) occurred from five (5) blasts on between January 2013 and March 2014.

## 4.15 Noise Management

[Minister's Condition of Approval 6.4]

### 4.15.1 Noise Management Plan

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.

An addendum to the Noise Management Plan related to the location of a monitoring site NO4 was approved by DoP in August 2007. A further amendment to change to the mine operation noise limits to contemporise the Development Consent conditions for consistency with the Environment Protection Licence No. 11912 condition L6 and the NSW Industrial Noise Policy (EPA, 2000). The amendment was submitted to DoP in September 2009 and approved in April 2010.

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/p22	Monitoring will be undertaken in July and January, representing mid-winter and mid-summer, respectively to enable seasonal variations in noise impacts to be established.	Noise monitoring is conducted in January and July each year by SLR and reports provided to Barrick.
s.6.2.3/p22	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 (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)
s.6.2.3/p22	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 reported each six months during 2013 and -2014.
s.6.2.4/p26	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.6.2.6/27	Monitoring locations DECCW, 18 August 2009 were: <ul style="list-style-type: none"> <li>• NO1 – New Lake foreshore;</li> <li>• NO2 – “Coniston” residence;</li> <li>• NO3 – bird breeding area;</li> <li>• NO4 – bird breeding area (location change approved in August 2007);</li> <li>• NO5 – “Gumbelah” residence;</li> <li>• NO6 – “Lake Cowal” residence;</li> <li>• NO7 – “West Lea” residence; and</li> <li>• NO8 – “McLintock” residence.</li> </ul>	The noise monitoring locations approved in August 2009 have been retained for the six monthly monitoring conducted by SLR between May 2013 and May 2014.
s.6.2.7/p27	Operator attended noise monitoring will be conducted at six monthly intervals at the noise monitoring locations using an integrating averaging sound 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.	Six-monthly operator attended noise monitoring is conducted in January and July by SLR and the results including the character and duration of the noise sources reported in section 5 of the SLR reports.
s.6.2.9/p28	Should the independent review process outlined	This commitment and MCoA condition 11.3

Section/ Page No.	Noise Management Plan Commitments	Comments
	in Consent Condition 11.3 (Section 15) require noise modelling or other studies to be conducted, modelling will be undertaken in accordance with the requirements of Section 6.2 of the Industrial Noise Policy.	have not been triggered between May 2013 and May 2014.
s.10.1.1	Traffic noise monitoring on the access road from West Wyalong will be undertaken on an annual basis by a suitably qualified person at: <ul style="list-style-type: none"> <li>• TN1 - 140 Ungarie Road (near Dumaresq Street), 30m offset from the road</li> <li>• TN2 - "Clairview" Residence, Wamboyne Road, 45m offset from the road</li> <li>• TN3 - "Windstone" Residence, 150m offset from Wamboyne Road</li> </ul>	Traffic noise monitoring is conducted annually during January/February by SLR at the three nominated sites.
s.10.1.3/p39	In order to allow timely response to traffic noise complaints from residences within 30m of the mine access road, Barrick will maintain suitable noise monitoring equipment on-site that can be deployed by environmental staff within 48 hours of complaint receipt.	A Type II Noise Meter is available on site in the Environment Section and is maintained with calibrated sources in readiness for any required monitoring related to noise complaints.
s.11/p44	A complaints register will be maintained by the Environmental Manager (MCoA 10.1(a)).	CGM has a 24hour complaints line (02) 6975 3454. CGM uses the External Communications component of the Responsibility Information Management System (RIMS) to track public complaints.
s.12.1/p45	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 and has met quarterly since October 2003.
s.13/p47	At least three months prior to increasing the mobile equipment fleet as described in the E42 Modification – Modified Request Environmental Assessment (Barrick, 2009), Barrick will notify the landowners of "Coniston", "McLintock" and "West Lea" in writing that they have the right to acquire their land at any stage during the CGM operations (MCoA 11.1).	CGM acts on legal advice in relation to the E42 Modification Environmental Assessment (2009), that they have not triggered the requirement for notification of landowners under condition 11.1 or 6.4(f).
s.17/p53	The AEMR will be prepared (MCoA 9.2).	Annual Environmental Management Reports (AEMR) prepared by CGM in accordance with MCoA 9.2, include noise management and monitoring results in section 3.11.

### 3.15.2 Noise Monitoring

The Noise Management Plan provides the procedures to be implemented for the management of noise impacts from the CGM activities. Six monthly attended and unattended noise monitoring surveys have been conducted to monitor the impact of noise on wildlife, a program to be undertaken to survey and investigate the effectiveness of noise reduction measures implemented in relation to noisy activities from the operations, and the noise reduction procedures to be implemented in the event of exceedence of the MCoA and EPL noise criteria.

- Operations noise surveys were conducted by SLR six monthly, in January-February and July between May 2013 and May 2014. Results from the day-time, evening and night-time operator attended survey showed that the measured intrusive noise levels were 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 frelevant noise requirements"*

With regard to unattended noise logger data monitored in the January/February 2014 program SLR concluded that:

*“Comparison of the noise levels indicates that the noise levels monitored in January/February 2014 were generally lower than the previous summer at all locations except at Gumbelah (No 5) where the levels were generally higher than the previous summer.*

*A review of the earlier operator -attended noise monitoring results indicates that decrease in the ambient noise levels is not due to the CGM operations, rather, the decreased noise levels are due to decreased faunal activity (insects + birds + frogs), presumably due to the decreasing level of rainfall (and lake water level) experienced over the last 12 months.”*

- No noise level exceedences were recorded during the May 2013 and May 2014 audit period.
- Additional monitoring was carried out for Barrick at the “Gumbelah”, Cowal North and “Laurel Park” residences and Noise Mitigation Deeds were finalised with “Gumbelah”, “Laurel Park” and “Cowal North” land owners in accordance with MCoA 6.4(c).

### 3.15.3 Conclusions

The Noise Management Plan prepared to satisfy the requirements of MCoA 6.4(b) has been implemented for the CGM operations. The revised Noise Management Plan was approved by DoP in April 2010.

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 conducted by SLR in January / February and July each year during 2013 and 2014 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 exhibited operational noise criteria exceedences during the May 2013 to May 2014 period.

## 4.16 Traffic Noise Management

[Minister's Condition of Approval 6.4(d)]

### 3.16.1 Traffic Noise Management Plan

The Traffic Noise Management Plan required under MCoA 6.4(d) was approved by DIPNR in 2003 and amendments approved in July 2007. The Traffic Management Plan was implemented for the CGM during construction mine. The components of the Traffic Noise Management Plan were incorporated into the revised Noise Management Plan 2010 (submitted to the DP&I for approval in July 2010).

Commitments in the Traffic Management Plan are listed in Table 19.

**Table 19: Traffic Management Plan Commitments**

Page No./section	Traffic Noise Management Plan Commitments	Comments
s.2.4/p8	Barrick will be responsible for ensuring Company-owned vehicles that operate on public roads are serviced and maintained in accordance with maintenance schedules and relevant statutory requirements to minimise noise emissions.	Barrick owned vehicles are serviced and maintained at the on-site workshops and meet relevant statutory requirements.
s.4.1/p11	Traffic noise will be undertaken in accordance with the following guiding documents that provide current monitoring practice. In accordance with Appendix A, traffic noise level monitoring will be undertaken	SLR Traffic Noise Monitoring Reports section 3 describe the attended and unattended monitoring procedures and the location of monitoring equipment



Page No./section	Traffic Noise Management Plan Commitments	Comments
	outside the residence some 1 m from the building facade that is most exposed to traffic and at a height of 1.5 m from floor level.	locations.
s.4.1.4p14	Traffic noise monitoring on the Project access road will be undertaken on an annual basis by a suitably qualified person (MCoA 6.4(c)(i))	Annual Traffic Noise Monitoring has been conducted by SLR in January-February each year.
s.8/p21	An AEMR will be prepared in accordance with the requirements of the DMR and Consent Condition 9.2 and submitted to the Director General	Annual Environmental Management Reports (AEMR) prepared by CGM in accordance with MCoA 9.2 includes traffic management in section 3.10.

### 3.16.2 Traffic Noise Monitoring Results

SLR conduct traffic survey and attended traffic noise monitoring at 130 Ungarie Road (TN1), "Clearview" residence Wamboyne Road (TN2) and Windstone" residence on Wamboyne Road (TN3).

SLR traffic noise monitoring results for the February 2014 exhibited:

- TN1 140 Ungarie Road  
The five-day average calculated  $LA_{eq(1hour)}$  mine generated traffic noise at TN1 during the daytime (1700 hours to 1800 hours) was 57 dBA (i.e. below the 65 dBA criterion). The five-day average calculated  $LA_{eq(1hour)}$  mine generated traffic noise at TN1 during the night-time (0600 hours to 0700 hours) was 56 dBA (i.e. below the 60 dBA criterion).
- TN2 "Clairview" Residence, Wamboyne Road  
The five-day average calculated  $LA_{eq(1hour)}$  mine generated traffic noise at TN2 during the daytime peak (1700 hours to 1800 hours) was 46 dBA (i.e. below the 60 dBA criterion). The five-day average calculated  $LA_{eq(1hour)}$  mine generated traffic noise at TN2 during the night-time peak (0600 hours to 0700 hours) was 51 dBA (i.e. below the 55 dBA criterion).
- TN3 "Windstone" Residence, Wamboyne Road  
The five-day average calculated  $LA_{eq(1hour)}$  mine generated traffic noise at TN3 during the daytime peak (1700 hours to 1800 hours) was 44 dBA (i.e. below the 55 dBA criterion). The five-day average calculated  $LA_{eq(1hour)}$  mine generated traffic noise at TN3 during the night-time peak (0600 hours to 0700 hours) was 45 dBA (i.e. below the 50 dBA criterion).

: SLR traffic noise monitoring results for the February 2013 exhibited:

- TN1 -140 Ungarie Road:  
The three-day average calculated  $LA_{eq(1hour)}$  mine generated traffic noise at TN1 during the daytime (1700 hours to 1800 hours) was 54 dBA (i.e. below the 60 dBA criterion). The three-day average calculated  $LA_{eq(1hour)}$  mine generated traffic noise levels at TN1 during night-time (i.e. 0600 to 0700 hrs) was 55 dBA which meets the 55 dBA criterion.
- TN2 – "Clearview Residence Wamboyne Road:  
The three-day average calculated  $LA_{eq(1hour)}$  mine generated traffic noise at TN2 during the daytime peak (1700 hours to 1800 hours) was 50 dBA (i.e. below the 55 dBA criterion). The three-day average calculated  $LA_{eq(1hour)}$  mine generated traffic noise at TN2 during the night-time peak (i.e. 0600 to 0700 hrs) was 53 dBA (i.e. 3 dBA above the 50 dBA criterion).
- TN3 – "Windstone" Residence Wamboyne Road:  
The three-day average calculated  $LA_{eq(1hour)}$  mine generated traffic noise at TN3 during the daytime peak (1700 hours to 1800 hours) was 47 dBA (i.e. below the 55 dBA criterion). The three-day average calculated  $LA_{eq(1hour)}$  mine generated traffic noise at TN3 during the night-time peak (0600 hours to 0700 hours) was 48 dBA (i.e. below the 50 dBA criterion).

No complaints in relation to traffic noise were received by Barrick during the May 2013 to May 2014 period.

Barrick entered into Agreements in September 2012 with residents who may potentially be affected traffic noise attributable to the mine traffic with the following proposal:

*“The Company proposes that a letter agreement be entered into with affected landowners on terms that exceedences of up to 5 dBA above the noise conditions of the Development Consent are permitted, however regular exceedences above 5 dBA will require the Company to enter into discussions with affected landowners to noise mitigation measures at their properties, such as provision of air conditioning.”*

The Agreement letters were signed by each of the landowners notified, indicating acceptance of the above condition of Agreement and the Director-General of DP&I was notified of the terms of agreement on 3 September 2012. (No response or acknowledgement had been received from DP&I at the date of this audit).

#### **Recommendation:**

Barrick should communicate/consult with DP&I to obtain written acceptance of the Agreement conditions with the residents in relation to Barrick response to traffic noise exceedences.

### **4.16.3 Conclusion**

Traffic noise monitoring is included in the revised Noise Management Plan. SLR conduct a traffic survey and attended traffic noise monitoring annually at 130 Ungarie Road (TN1), “Clearview” residence Wamboyne Road (TN2) and Windstone” residence on Wamboyne Road (TN3).

Noise results for the 2013 and 2014 traffic surveys indicate no traffic noise exceedence was at TN1, TN2 or TN3 between May 2013 and May 2014.

No complaints from residents regarding traffic noise were received during the period May 2013 to May 2014.

Barrick entered into Agreements with residents who may potentially be affected traffic noise attributable to the mine traffic, in September 2012.

## **4.17 Community Complaints**

(Ministers Condition of Approval condition 10.1

Environment Protection Licence 11912 conditions M4.2 and 4.3)

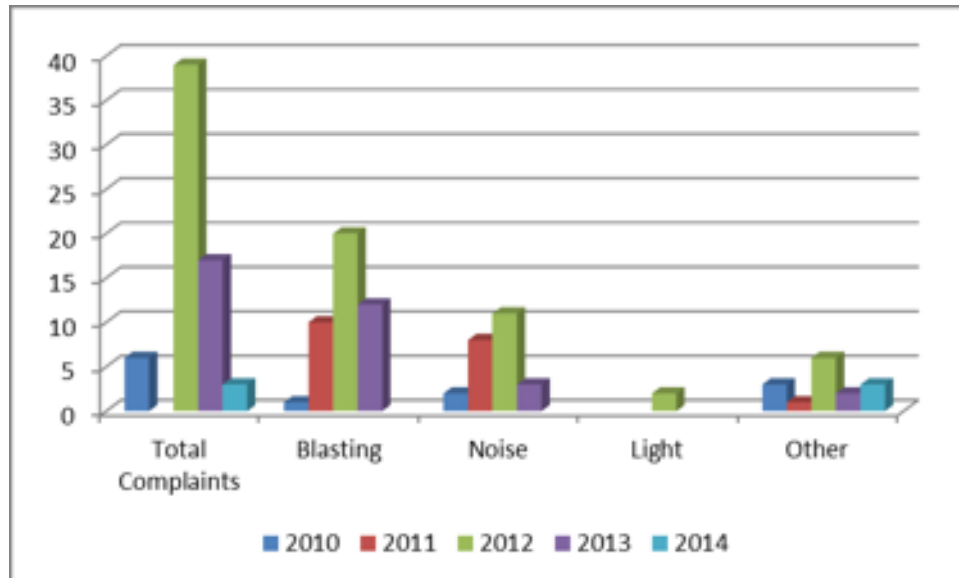
### **4.17.1 Complaints Procedure**

Complaints received from the community on their 24hour complaints line (02) 6975 3454 by CGM are recorded in the External Communications component of the Responsibility Information Management System (RIMS).

The RIMS database records each complaint including details as required under EPL 11912 condition M4.2:

- date and time of the complaint;
- method by which the complaint was made;
- personal details of the complainant, as provided by the complainant or, if no such details were provided, a note to that effect. Complainants are not recorded by name in the reports submitted to the agencies, but are reported by resident identifier (e.g. Complainant A etc. to maintain complainant confidentiality);
- nature of the complaint; and
- action taken by CGM and outcome in relation to the complaint, including any follow-up contact with the complainant.

All complaints are retained within the RIMS database, compliant with the requirement of EPL 11912 condition M4.3 and six monthly summary reports of complaints received by CGM are prepared and submitted to OEH/BSC/DI&I/CEMCC and DP&I.



The pattern of complaints exhibits a significant decrease in blasting and noise complaints between May 2013 and May 2014, following agreements reached with three complainants in Q3 2013.

#### 4.17.2 Conclusion

The complaints handling process and procedure for reporting of complaints and action taken by CGM / Barrick, comply with the requirements of MCoA 10.1 and EPL condition M4. The RIMS database includes all the information required by the approval conditions and details of each complaint and action taken by CGM in response to the complainant.

A significant reduction in blasting and noise complaints occurred in late 2013 after CGM finalised agreements with three complainants. All other complaint numbers dropped between May 2013 and May 2014.

### 4.18 Independent Monitoring Panel

The Independent Monitoring Panel established in accordance with MCoA 8.8(b) has prepared an Annual Report for the Cowal Gold Project with recommendations.

The IMP also review the Independent Environmental Audit prepared under MCoA 8.8(a) and have made the following comment:

*“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.”*

Barrick responses to the IMP Report recommendations and subsequent assessment of Barrick actions to the IMP are presented below.

**Eighth IMP Report October 2012**

IMP Recommendation	Barrick Response	IMP Assessment of Barrick Response to Recommendations
<p><b>2012 IMP Recommendation 1:</b> CGM should endeavour to complete the Northern Waste Emplacement Trials as soon as required materials become available.</p>	<p><b>Barrick response</b>  <i>Barrick with DnA Environmental has finalised the design of additional replicate trial plots on the northern batters of the Northern Waste Rock Emplacement. The trial aims to further assess the effectiveness of various treatments associates with the rock mulch/top soil/ hay rehabilitation cover system.</i></p>	<p>During the mine visit, the IMP assessed the progress in implementing the Northern Waste Emplacement Trials against the schedule shown in Attachment B. It was noted that these trials have not commenced owing to the lack of suitable native pasture hay as a result of erratic rainfall during the previous growing season. Advice was received from mine personnel that reasonable rainfall during autumn/winter has resulted in good native pasture growth, and that hay will be harvested in October 2013.</p> <p>Concerns have been raised regarding the likelihood of natural regeneration of native woody vegetation on post mining landscapes through processes such as windblown seed, and the need to engage in active revegetation.</p> <p>The IMP discussed the trial design with mine staff and stressed the need to consider the inclusion of native shrubs and trees and the need to plan well ahead in terms of native pasture hay and native seed collection for large scale rehabilitation in the future.</p> <p>Direct seeding and planting of tube stock were two options discussed, although it was acknowledged that mass planting of tube stock may not be a feasible option for the whole site.</p>
<p><b>2012 IMP Recommendation 2:</b> CGM should continue to monitor existing rehabilitation trials (and those planned for establishment in 2012) with a view to further refining its approach to achieve sustainable, post-mining landscapes.</p>	<p><b>Barrick response</b>  <i>Barrick will continue to engage DnA Environmental to monitor the performance of CM rehabilitation areas including existing and planned rehabilitation trials to prepare an annual rehabilitation report that evaluates the status of rehabilitation at CGM. In accordance with the CGM Rehabilitation and Landscape Management Strategy (2009), Barrick will continue to refine and improve the CGM rehabilitation program based on the results from the trials, investigations and studies undertaken.</i></p>	<p>The IMP noted in the Monitoring Report by DnA Environmental (January 2013) that the best performing treatments in terms of ecological sustainability appeared to be those that did not include subsoil. However examination of root growth of 2-year old Eucalypts showed that the roots penetrated subsoil but not oxide material. Given the importance of having sufficient satisfactory root growth material for all the future potential rehabilitation on the mine site, it is considered premature to discount the use of subsoil material as a substrate at this stage of investigation. Indeed there would appear to be a good opportunity for the benefits or otherwise of subsoil to be further explored in the Northern Waste Emplacement Trial that is yet to be established.</p> <p>Wider use of subsoil in rehabilitation may become a necessity should the available</p>

		supply of topsoil be inadequate to meet the needs of the site. Subsoil ameliorated with organic matter (e.g. biosolids, and gypsum) may become a necessary planting medium.
<b>2012 IMP Recommendation 3:</b> CGM should continue to explore reasons for the anomalous metal concentrations on control soil and overburden samples being obtained from one of the laboratories used for analysis of dust samples.	<b>Barrick response</b> <i>Due to unresolved anomalous metals results for monthly depositional dust samples provided to ALS Laboratory Group, Barrick commenced dispatching all dust gauge samples to the National Measurement Institute (NMI) in mid-2012. Barrick has requested ALS to review the laboratory procedures used for metals analysis and provide a justification for the anomalous metal concentrations provided to Barrick during 2012.</i>	The IMP noted in the 2012 AEMR that the values for copper and zinc in dust tended to decrease after about August 2012 when a new analysing laboratory was employed, but that there still tended to be elevated values that require closer scrutiny. The IMP also notes and commends the actions listed in the 2012 AEMR to improve the collection of dust samples and their analysis for metals and the ongoing involvement of the University of Sydney in advising on collection and analysis.
<b>2012 IMP Recommendation 4:</b> In the 2012 AEMR, CGM should not only provide figures showing groundwater contours around the pit, but discuss the implications for the surrounding environment.	<b>Barrick response</b> <i>A description of the regional and local hydrogeological regime surrounding the CGM is provided in the approved Cowal Gold Mine E42 Modification Modified Request Environmental Assessment (2009). The Modified Request also included a hydrogeological assessment of the potential for the hydrogeological regime to change as a result of the Modified Request Project, which concluded that net potential hydrogeological impacts would be less than those described in the E42 Modification Project (2009).</i>	The discussion in the 2012 AEMR on the groundwater surfaces and potential impacts in the pit and tailings storage facilities areas satisfactorily addresses Recommendation 4 of the IMP.
<b>2012 IMP Recommendation 5:</b> CGM should ensure that copper is analysed on all surface water bodies, including Lake Cowal (along with the other metals and metalloids listed) and that these data are reported in the next AEMR.	<b>Barrick response</b> <i>Copper concentration of Lake Cowal surface water during 2011-2012 is lower than the average total copper concentration in 1991/1992 (prior to construction of the CGM) and dissolved copper concentrations have remain relatively unchanged. Based on this Barrack considers the absence of copper as an analyte in the CGM surface water monitoring program is valid. Notwithstanding Barrick will continue to include copper in the Lake Cowal monitoring program until the anomalous dust analysis results have been resolved with ALS.</i>	The IMP is satisfied with the comprehensive reply by CGM to this recommendation.
<b>2012 IMP Recommendation 6:</b> CGM should be prepared for operational or advocacy requirements arising from progressive drying and emptying of Lake Cowal.	<b>Barrick response</b> <i>Barrick considers that the environmental management controls currently in place at the CGM will adequately prepare the CGM for potential ecological occurrences and operations requirements associated with Lake Cowal drying cycle. ....Notwithstanding, Barrick will consult with relevant agencies and the CEMCC regarding works proposed to address an ecological</i>	The IMP acknowledges the CGM response and awareness, and notes that public concerns regarding aspects of drying dynamics, for example on population viability and health of yabbies, may be misattributed to CGM.



	<i>occurrence that may arise as a result of the Lake Cowal drying cycle as part of Barrick's ongoing stakeholder engagement, if necessary.</i>	
<b>Eighth IMP Report October 2013 (received by Barrick 2 June 2014)</b>		
<b>IMP Recommendation</b>	<b>Barrick Response</b>	<b>IMP Assessment of Barrick Response to Recommendations</b>
<b>2013 IMP Recommendation 1:</b> 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.	<i>The Ninth Independent Monitoring Panel Report was received by Barrick on 2 June 2014. Response to the Ninth IMP Report recommendations will be prepared by Barrick for submission to the IMP.</i>	IMP assessment of responses to the recommendations and actions taken by Barrick during 2014 will be reported in the Tenth IMP Annual Report October 2014.
<b>2013 IMP Recommendation 2:</b> 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.	<i>The Ninth Independent Monitoring Panel Report was received by Barrick on 2 June 2014. Response to the Ninth IMP Report recommendations will be prepared by Barrick for submission to the IMP.</i>	IMP assessment of responses to the recommendations and actions taken by Barrick during 2014 will be reported in the Tenth IMP Annual Report October 2014.
<b>2013 IMP Recommendation 3:</b> 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.	<i>The Ninth Independent Monitoring Panel Report was received by Barrick on 2 June 2014. Response to the Ninth IMP Report recommendations will be prepared by Barrick for submission to the IMP.</i>	IMP assessment of responses to the recommendations and actions taken by Barrick during 2014 will be reported in the Tenth IMP Annual Report October 2014.
<b>2013 IMP Recommendation 4:</b> 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.	<i>The Ninth Independent Monitoring Panel Report was received by Barrick on 2 June 2014. Response to the Ninth IMP Report recommendations will be prepared by Barrick for submission to the IMP.</i>	IMP assessment of responses to the recommendations and actions taken by Barrick during 2014 will be reported in the Tenth IMP Annual Report October 2014.

#### 4.18.2 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 provided responses to the IMP recommendations and address the IMP requirements within the subsequent 12 month IMP review period.

## 5. CONCLUSION

The independent environmental audit was conducted between 28 April 2013 and 31 May 2014 to satisfy MCoA 8.8 and assessed compliance of the CGM operations for the mining and ore processing, for the period of 1 May 2013 to 1 May 2014.

Site inspections, document review and discussions with relevant CGM personnel were undertaken during 28 April 2013 and 3 May 2014. Additional information for verification of compliance with the MCoA was 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 MCoA 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.

The following recommendations are provided in relation to the findings of the audit:

### **Recommendation 1**

To address MCoA 3.2, Barrick should request a response from DP&I in relation to revised management plans submitted DoP/DP&I during the 2010 and May 2014 period:

- Revised Rehabilitation and Offset Management Plan (lodged 21 August 2013)
- Flora and Fauna Management Plan - Threatened Species Management Strategy (lodged 13 November 2012)
- Revised Noise Management Plan (lodged 24 December 2012)
- Revised Site Water Management Plan (lodged 8 August 2013)
- Addendum Surface Water, Groundwater, Meteorological and Biological Management Programme (Mine Operations) (lodged 13 August 2013)
- Post Mine Operations SGWMBMP (lodged 10 October 2013)
- Revised Blast Management Plan (lodged 11 December 2012)
- Addendum to Flora Fauna Management Plan response sent 13 November 2012.

### **Recommendation 1**

The management plans required under the MCoA are due for review each 5 years in accordance with MCoA 3.2. As a response from DP&I has not been received from DP&I on a number of the management plans submitted during the 2010-2014 period, it is recommended that the review of each of the management plans occur when the decision by DP&I on MOD11 for the CGM Project and approval conditions are finalised.

### **Recommendation 3**

To meet the obligations under the Mining Operations Plan(s) and Development Consent condition 2.1 and 3.6, the waste rock emplacement areas that have reached the areal and height criteria approved in the MOP's and the Development Consent for the Cowal Gold Project, should be contoured and rehabilitated with the proven blends of rock, subsoil, gypsum and mulch and seed mixture (identified by the rehabilitation trials) as soon as the weather conditions are conducive with seed germination and establishment of a stabilising cover crop.

### **Recommendation 4**

To confirm compliance with MCoA 6.4(d), Barrick should communicate/consult with DP&I (and EPA) to obtain written acceptance of the Agreement conditions with the residents in relation to the Barrick response to traffic noise exceedences.

### **Recommendation 5**

Barrick should clarify with DP&I the intent/requirement under MCoA 11.1 (related to maximum fleet numbers and land acquisition request(s) by land owners identified in the condition of consent). This issue should be clarified prior to finalisation of Modification to the Development Consent MOD11 conditions of approval.

## GLOSSARY OF TERMS

<b>AEMR</b>	Annual Environmental Management Report
<b>AR</b>	Annual Return – EPA
<b>BSC</b>	Bland Shire Council
<b>CEMCC</b>	Community Environmental Monitoring and Consultative Committee
<b>CGM</b>	Cowal Gold Project
<b>CN</b>	Cyanide
<b>CN<sub>WAD</sub></b>	Cyanide weak acid dissociable
<b>DA</b>	Development Application
<b>DECC</b>	Department of Environment and Climate Change (formerly DEC)
<b>DECCW</b>	Department of Environment, Climate Change and Water (formerly DECC)
<b>DII</b>	Department of Industry and Investment (formerly DPI)
<b>Director-General</b>	Director-General of DP&I
<b>DTIRIS</b>	Department of Trade and Investment, Regional Infrastructure and Services
<b>DLWC</b>	Department of Land and Water Conservation
<b>DMR</b>	Department of Mineral Resources
<b>DNR</b>	Department of Natural Resources (now OoW)
<b>DoP</b>	Department of Planning (formerly DIPNR)
<b>DP&amp;E</b>	Department of Planning and Environment (established April 2014)
<b>DP&amp;I</b>	Department of Planning and Infrastructure (previously DoP / Planning NSW)
<b>DRE</b>	Division of Resources and Energy (part of DTIRIS)
<b>DSC</b>	Dam Safety Committee
<b>DWE</b>	Department of Water and Energy
<b>EIS</b>	Environmental Impact Statement – Cowal Gold Project 1998
<b>EMP</b>	Environmental Management Plan
<b>EP&amp;A Act</b>	<i>Environment Planning and Assessment Act 1979</i>
<b>EPA</b>	NSW Environment Protection Authority
<b>EPL</b>	Environment Protection Licence
<b>ETBC</b>	Employment Training and Business Committee
<b>FSC</b>	Forbes Shire Council
<b>LCF</b>	Lake Cowal Foundation
<b>MOP</b>	Mining Operations Plan
<b>NoW</b>	NSW Office of Water
<b>NPW Act</b>	<i>National Parks and Wildlife Act 1974</i>
<b>NPWS</b>	National Parks and Wildlife Service
<b>OEH</b>	Office of Environment and Heritage
<b>OERP</b>	Operational Emergency Response Plan
<b>OoW</b>	NSW Office of Water
<b>RTA</b>	Roads and Traffic Authority (now RMS)
<b>RIMS</b>	Responsibility Information Management System
<b>RMS</b>	Roads and Maritime Services
<b>SIS</b>	Species Impact Statement
<b>TSR</b>	Travelling Stock Route
<b>WAD</b>	Weak acid dissociable
<b>WAL</b>	Water Access Licence
<b>WCC</b>	Wiradjuri Condobolin Corporation
<b>WCC&amp;HC</b>	Wiradjuri Condobolin Culture and Heritage Company

## ATTACHMENTS

**Attachment A     Minister's Conditions of Approval (MCoA)**

**Attachment B     Environment Protection Licence (EPL)**

**Attachment C     Mining Lease Conditions (ML)**

## DA 14/98 - Consolidated Consent January 2011

Red Type represents August 2003 Modification (Mod 1)

Green Type Represents December 2003 Modification (Mod 2)

Blue Type Represents August 2004 Modification (Mod 3)

Lavender Type Represents August 2006 Modification (Mod 4)

Brown Type Represents February 2008 Modification (Mod 5)

Orange Type Represents March 2010 Modification (Mod 6)

Grey Type Represents February 2009 Modification (Mod 7)

Purple Type Represents August 2009 Modification (Mod 8)

Turquoise Type Represents January 2011 Modification (Mod 9)

Violet Type represents 16 December 2010 s75W Modification (MOD 10)

No.	Minister's Condition of Approval	Verification	Comments	Compliance
1.1	Adherence to terms of DA, EIS, SIS, etc.			
	(a) The Development is to be carried out generally in accordance with: (i) EIS dated 13 Mar 1998, including the Statement of Intent by North Gold (WA) Ltd, and prepared by Resource Strategies, as amended by the plans in Appendix 2 of this consent; (ii) other relevant documentation, including the Applicant's primary submission, and submission to the Commission of Inquiry; (iii) modification application submitted by Barrick Australia Limited, dated 20 Jun 2003; (iv) modification application and supporting information submitted by Barrick Australia Limited, dated 13 Nov 2003; (v) modification application and supporting information submitted by Barrick Australia Limited, dated 22 Jun 2004; (vi) modification application and supporting documentation submitted by Barrick Australia Limited, dated 15 Aug 2006; (vii) modification application and supporting documentation submitted by Barrick Australia Limited, dated 24 Dec 2007; (viii) modification application and supporting documentation submitted by Barrick Australia Limited, dated 30 Jan 2009; (ix) modification application and supporting documentation submitted by Barrick (Cowal) Limited, dated 23 Jun 2009; (x) modification application dated 25 Mar 2008 and supporting EA submitted by Barrick Australia Limited; (xi) modification application dated 22 Nov 2010 and supporting letter submitted by Barrick (Cowal) Limited; and (xii) modification application dated 16 December 2010 (Mod 10) and supporting Environmental Assessment titled <i>Cowal Gold Mine Water Supply Modification (Section 75W Modification)</i> and dated December 2010, submitted by Barrick (Cowal) Limited; and (xiii) conditions of this consent.	<ul style="list-style-type: none"> <li>• EIS, North Gold (WA) Ltd, prepared by Resource Strategies, 13 Mar 1998;</li> <li>• Modification application Barrick Australia Limited, 20 Jun 2003;</li> <li>• Modification application, Barrick Australia Limited, 13 Nov 2003;</li> <li>• Modification application, Barrick Australia Limited, 22 Jun 2004;</li> <li>• Modification application, Barrick Australia Limited, 15 Aug 2006;</li> <li>• Modification application, Barrick Australia Limited, 24 Dec 2007;</li> <li>• Modification application, Barrick Australia Limited, 30 Jan 2009;</li> <li>• Modification application Barrick (Cowal) Limited, 23 Jun 2009;</li> <li>• Modification application Barrick (Cowal) Limited, 22 Nov 2010</li> <li>• Modification application (Mod 10) and Environmental Assessment titled <i>Cowal Gold Mine Water Supply Modification (Section 75W Modification)</i>, Barrick (Cowal) Limited, 16 December 2010</li> </ul>	The CGM has been developed generally in accordance with the 1998 EIS, Commission of Inquiry submissions, supporting documentation, the Minister's Conditions of Approval (MCoA) and Modifications to the Development Consent granted under the <i>Environment Planning and Assessment Act 1979</i> , and E42 Modification Modified Request December 2010, as listed in MCoA 1.1.	Compliant



**COWAL GOLD PROJECT - INDEPENDENT ENVIRONMENTAL AUDIT – APRIL 2012**

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	(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.			<b>Noted</b>
<b>1.2</b>	<b><i>Period of Approval/Project Commencement</i></b>			
	(i) Mining operations may take place until 31 December 2019. <i>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.</i>	<ul style="list-style-type: none"> <li>Letter from DMR Mining Application No. 45 – Cowal Gold Project, 18 June 2003</li> </ul>	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.	<b>Noted</b>
	(ii) At least one month prior to the commencement of construction, or within such period as agreed by the Director-General, the Applicant shall submit for the approval of the Director-General a compliance report detailing compliance with all the relevant conditions that apply prior to the commencement of construction.	<ul style="list-style-type: none"> <li>Pre-Construction Compliance Report 22 Dec 2003</li> <li>Supplement to Compliance Report, 7 April 2004</li> </ul>	Pre-Construction Compliance Report was submitted to DIPNR and approved by the Director-General on 22 Dec 2003, prior to construction activities commencing. A supplementary Compliance Report was submitted on 7 April 2004 related to transfer of Lot 10 in DP1059150 to the Crown for the new Travelling Stock Route (TSR).	<b>Compliant Complete</b>
	(iii) At least one month prior to commissioning of the ore processing plant, or within such period as agreed by the Director-General, the Applicant shall submit for the approval of the Director-General a compliance report detailing compliance with all the relevant conditions that apply prior to the commissioning of the ore processing plant.	<ul style="list-style-type: none"> <li>Compliance Report submitted to Director-General, 20 January 2006</li> <li>Letter from DoP re Compliance with Condition 1.2(iii), 6 March 2006</li> </ul>	A Compliance Report prior to the commissioning of the ore processing plant was submitted to the Director-General on 20 January 2006 and accepted by the Director-General on 6 March 2006.	<b>Compliant Complete</b>
	(iv) Date of commencement of construction works and date of commissioning of the ore processing plant are to be notified in writing to the Director-General and BSC, at least two weeks prior to commencement of construction works and commissioning of the ore processing plant respectively.	<ul style="list-style-type: none"> <li>Letter from BDW to D-G and BSC re Notice of Commencement of Works, 24 Dec 2003</li> <li>Letter to BSC/DoP re Notice of Commencement of Commissioning of the Ore Processing Plant, 16 Feb 2006</li> </ul>	The commencement of construction was notified to the D-G and BSC on 24 December 2003 and construction activities started on 12 January 2004. Notification of date of commencement of commissioning of the ore processing plant on or about 13 March 2006 was provided to the Director-General and BSC on 16 February 2006.	<b>Compliant Complete</b>
	(v) No mine construction activity is to occur until the relevant approvals under the Environmental Planning and Assessment Act 1979 have been obtained for the construction of the transmission line from Temora to the mine site and the mine access road upgrade. This condition does not require approval to be obtained under the Environmental Planning and Assessment Act 1979 in relation to any rail crossing before mine construction activities can commence.	<ul style="list-style-type: none"> <li>Approval under Section 115(B) in relation to the Temora to Cowal 132KV Transmission Line, 3 Aug 1999</li> <li>Bland Shire Council Decision Notification of Approval of Cowal Gold Project Access Road Upgrade, 21 Apr 1999</li> </ul>	Approval under Part 5 of the EP&A Act of the Temora Electrical Transmission Line (ETL) was granted to Great Southern Energy August 1999. The ETL was commissioned in January 2006 and is maintained and operated by Country Energy. Approval by the Bland Shire Council (BSC) and approval under Part 5 Approval of the EP&A Act was granted on 21 April 1999 for the upgrade of the access road to the CGM.	<b>Compliant Complete</b>
	(vi) If construction works have not commenced within two years of this development consent, the Applicant shall provide an annual report	<ul style="list-style-type: none"> <li>Letter from DIPNR re Application under Section 95B</li> </ul>	Construction works for the CGM commenced in January 2004 and commissioning of the ore processing plant	<b>Compliant Complete</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	on the status of the project and any major changes to the environmental conditions of the site. If required, the first report shall be provided to the Director-General on the second anniversary of the granting of this consent.	of the EP&A Act, 12 May 2004	commenced in March 2006.	
<b>1.3</b>	<b><i>Dispute Resolution</i></b>			
	In the event that the Applicant and the BSC or a Government agency, other than the <b>Department</b> , cannot agree on the specification or requirements applicable under this consent, the matter shall be referred by either party to the Director-General or if not resolved, to the <b>Minister for Planning</b> , whose determination of the disagreement shall be final and binding on the parties.			<b>Noted</b>
<b>1.4</b>	<b><i>Security Deposits and Bonds</i></b>			
	Security deposits and bonds will be paid as required by <b>DII (Minerals)</b> under mining lease approval conditions.	<ul style="list-style-type: none"> <li>Confirmation of Security Certificate Ref:ALHS-602788, 8 Sep 2009</li> <li>Letter from DI&amp;I re ML 1535 Security Deposit, 16 Apr 2010</li> <li>Letter from Barrick to DI&amp;I re Security Bond, 30 Apr 2010</li> </ul>	The Security deposit for ML 1535 was amended by DI&I with the security required increased to \$63,500,000 to take effect from 16 April 2010.  Barrick advised DII on 30 April 2010 that the unconditional bank guarantee for the security bond had been lodged for the additional amount notified by DI&I on 16 April 2010.	<b>Compliant</b>
<b>2</b>	<b>MINE MANAGEMENT</b>			
<b>2.1</b>	<b><i>Mine Management Plan, Operations and Methods</i></b>			
	<p>The Applicant shall submit to and have accepted by the <b>DII (Minerals)</b>, a Mining Operations Plan in accordance with current guidelines issued by <b>DII (Minerals)</b>, prior to commencement of mining. The Plan covers mining operations for a period of up to seven years. <b>Changes in mining operations must be reflected in a revised Plan, which must be approved by DII (Minerals) prior to commencing the changed operations.</b></p> <p>The revised Plan addressing the changes in mining operations proposed in the modification application and supporting documentation submitted by Barrick Australia Limited, dated 30 January 2009, must 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.</p>	<ul style="list-style-type: none"> <li>Letter from DI&amp;I re Approval of MOP Jan 2011 to Sep 2012, 30 Mar 2011</li> <li>Letter to DTIRIS re Variation to MOP, 5 Apr 2012</li> <li>MOP Oct 2012 to Jan 2014</li> <li>Letter to DT&amp;I- DRE re Extension of MOP to 31 Jan 2015, 27 Sep 2013</li> <li>Letter from DT&amp;I-DRE re Approval of MOP Extension, 4 Oct 2013</li> <li>Draft MOP April 2014 to April 2016</li> </ul>	<p>A MOP for January 2011 to September 2012 was submitted to DI&amp;I and accepted on 30 March 2011.</p> <p>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).</p> <p>On 4 October 2013, the D-G of the DTIRIS-DRE granted Barrick an extension to the term of the previous <i>Cowal Gold Mine Mining Operations Plan (ML 1535) October 2012 – January 2014</i> to 31 January 2015 to align with the resubmission of the Modification before DP&amp;I.</p> <p>A draft Mining Operations Plan (MOP) was prepared by Barrick in accordance with the requirements of the Mining Lease 1535 condition 25, MCoA 2.1 and the NSW Department of Trade and Investment, Regional Infrastructure and Services – Division of Resources and Energy (DTIRIS-DRE) <i>ESG3: Mining Operations Plan (MOP) Guidelines, September 2013</i> (the MOP Guidelines) (DTIRIS-DRE, 2013). This MOP (when approved) will replace the previous MOP and describes the proposed operational mining activities for the currently approved CGM for the period 30 April 2014 to 30 April 2016.</p>	<b>Compliant</b>

**COWAL GOLD PROJECT - INDEPENDENT ENVIRONMENTAL AUDIT – APRIL 2012**

No.	Minister's Condition of Approval	Verification	Comments	Compliance
<b>2.2</b>	<b><i>Ore, Waste and Concentrate Production</i></b>			
	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.		No ore or excavated materials from other mines or locations have been transported to the CGM site between May 2003 and April 2013.	<b>Compliant</b>
<b>2.3</b>	<b><i>Mine and Public safety</i></b>			
	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. (Refer also to condition 5.4(b)(ii)).		A 1.3m wire strand fence was erected around the Mining Lease Area in 2004 in accordance with the design requirements.	<b>Compliant</b>
<b>3</b>	<b>LAND AND SITE ENVIRONMENTAL MANAGEMENT</b>			
<b>3.1</b>	<b><i>Appointment of Environmental Officer</i></b>			
	(i) The Applicant shall employ an Environmental Officer to exclusively work for the Cowal gold mine and no other mine, whose qualifications are acceptable to the <b>DII(Minerals)</b> who shall report to the Mine Manager. The Officer shall be employed throughout the life of the mine, and shall: <ul style="list-style-type: none"> <li>(a) be responsible for the preparation of the environmental management plans (refer condition 3.2)</li> <li>(b) be responsible for considering and advising on matters specified in the conditions of this consent and compliance with such matters;</li> <li>(c) be responsible for receiving and responding to complaints in accordance with condition 10.2(a);</li> <li>(d) facilitate an induction and training program for all persons involved with construction activities, mining and remedial activities; and</li> <li>(e) have the authority and independence to require reasonable steps to be taken to avoid or minimise significant environmental impacts which are not in accordance with this consent or the EIS and failing the effectiveness of such steps, to cease the activity causing the problem immediately if a significant impact on the environment is likely to occur.</li> </ul>	<ul style="list-style-type: none"> <li>• Letters to DMR, EPA, NPWS, DLWC, BSC and CEMCC re Appointment of Garry Pearson as Environmental Officer, 31 Aug 2006</li> </ul>	DIPNR, DMR, EPA, NPWS, DLWC and BSC were notified on August 2006 of the appointment of Garry Pearson to the position of Environmental Manager on the CGM site. The duties and responsibilities outlined in the Job Description for the Environmental Manager address the requirements of MCoA 3.1	<b>Compliant</b>
	(ii) The Applicant shall notify the Director-General, <b>DII (Minerals)</b> , <b>DECCW</b> , <b>NoW</b> , BSC and the CEMCC (refer condition 8.7) of the name and contact details of the Environmental Officer upon appointment and any changes to that appointment.	<ul style="list-style-type: none"> <li>• Letters to DMR, EPA, NPWS, DLWC, BSC and CEMCC re Appointment of Garry Pearson as Environmental Officer, 31 Aug 2006</li> </ul>	The authorities were advised of the appointment of Garry Pearson (replacing David Blaxland) as Environmental Manager to the CGM in August 2006.	<b>Compliant</b>
<b>3.2</b>	<b><i>Environmental Management Plans</i></b>			
	The Applicant shall prepare the following environmental management plans:	<ul style="list-style-type: none"> <li>• Heritage Management Plan</li> <li>• Indigenous Archaeology &amp;</li> </ul>	Refer to the relevant conditions re documentation verification/comment.	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<ul style="list-style-type: none"> <li>Heritage Management Plan (refer condition 3.3)</li> <li>Indigenous Archaeology &amp; Cultural Management Plan (refer condition 3.3)</li> <li>Fauna management plan (refer condition 3.4)</li> <li>Erosion and sediment control plan (refer condition 3.5(a))</li> <li>Soil stripping management plan (refer condition 3.5(b))</li> <li>Rehabilitation and Offset management plan (refer condition 3.6(d))</li> <li>Bushfire management plan (refer condition 3.8)</li> <li>Land management plan (refer condition 3.10)</li> <li>Compensatory wetland management plan (refer condition 3.11(v))</li> <li>Site water management plan (refer condition 4.1)</li> <li>Cyanide management plan (refer condition 5.3(b))</li> <li>Hazardous waste &amp; chemical management plan (refer condition 5.7)</li> <li>Dust management plan (refer condition 6.1)</li> <li>Blast management plan (refer condition 6.3)</li> <li>Noise management plan (refer condition 6.4(g))</li> </ul> <p>The management plans are to be revised/updated at least every five years, or as otherwise directed by the Director-General, in consultation with the relevant government authorities. They will reflect changing environmental requirements or changes in technology/operational practices. Changes shall be made and approved in the same manner as the initial environmental management plan. The plans shall also be made publicly available at BSC within two weeks of approval of the relevant government authority.</p>	<ul style="list-style-type: none"> <li>Cultural Management Plan</li> <li>Flora and Fauna Management Plan</li> <li>Erosion and Sediment Control Management Plan</li> <li>Soil Stripping Management Plan</li> <li>Rehabilitation and Offset management Plan</li> <li>Bushfire Management Plan</li> <li>Land Management Plan</li> <li>Compensatory Wetland Management Plan</li> <li>Site Water Management Plan</li> <li>Cyanide Management Plan</li> <li>Hazardous Waste and Chemical Management Plan</li> <li>Dust Management Plan</li> <li>Blast Management Plan</li> <li>Noise Management Plan</li> <li>Letter to DoP re Revised Rehabilitation/Blast/Noise Management Plans, Jul 2010</li> <li>Letter to DoP re Revised Site Water Management Plan, Nov 2010 and Feb 2012</li> <li>Letter to DP&amp;I re Management Plan Submissions, 5 Apr 2012</li> </ul>	<p>The environmental management plans prepared and approved by the relevant government authorities were:</p> <p>Heritage Management Plan MCoA 3.3(a)(i)</p> <p>Indigenous Archaeology &amp; Cultural Management Plan MCoA 3.3(a)(ii)</p> <p>Flora and Fauna Management Plan MCoA 3.4</p> <p>Erosion and Sediment Control Management Plan MCoA 3.5(a)</p> <p>Soil Stripping Management Plan MCoA 3.5(b)</p> <p>Rehabilitation and Offset Management Plan MCoA 3.6(d)</p> <p>Bushfire Management Plan MCoA 3.8</p> <p>Land Management Plan MCoA 3.10</p> <p>Compensatory Wetland Management Plan MCoA 3.11(v)</p> <p>Site Water Management Plan MCoA 4.1</p> <p>Cyanide Management Plan MCoA 5.3(b)</p> <p>Hazardous Waste and Chemical Management Plan</p> <p>Dust Management Plan MCoA 6.1</p> <p>Blast Management Plan MCoA 6.3</p> <p>Noise Management Plan MCoA 6.4(g)</p> <p>The management plans were reviewed during 2008 and revised as necessary for submission to DoP.</p> <p>The management plans have been reviewed and revised as necessary to address the requirements of Modifications granted between 2008 and 2014 and submitted to DP&amp;I.</p>	
3.3	<b>Heritage Assessment and Management</b>			
	<p>(a) The Applicant shall prior to commencement of construction works:</p> <p>(i) prepare a Heritage Management Plan (HMP) to address non-indigenous cultural heritage issues. The HMP shall be prepared in consultation with Bland District Historical Society, BSC, and Lake landholders/residents, and to the satisfaction of the Director-General;</p> <p>(ii) prepare an Indigenous Archaeology and Cultural Management Plan (IACMP) to 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. The IACMP shall be prepared in consultation with NPWS, the Local Aboriginal Land Council, a consultant archaeologist, any other stakeholders identified by NPWS,</p>	<ul style="list-style-type: none"> <li>Heritage Management Plan Sept 2003</li> <li>Letter from BSC re European Heritage Management Plan, 25 Sep 2003</li> <li>Letter from DIPNR re Approval of the Indigenous Archaeology and Cultural Heritage Management Plan, 11 Nov 2003</li> </ul>	<p>(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 2009 and no revision was necessary.</p> <p>(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 2009 and no</p>	<p><b>Compliant</b></p> <p><b>Compliant</b></p>

**COWAL GOLD PROJECT - INDEPENDENT ENVIRONMENTAL AUDIT – APRIL 2012**

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	and to the satisfaction of the Director-General; 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.		revision was required. (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.	<b>Compliant</b>
	(b) The Applicant shall, prior to the commencement of construction works in a particular part of the DA area, submit to and have approved by the Director-General of NPWS, a Consent to Destroy application under Section 90 of the National Parks and Wildlife Act 1974 in relation to that particular part of the DA area for Aboriginal archaeological sites that have been identified to be damaged or destroyed as a result of the development prior to consent and/or by the IACMP.	<ul style="list-style-type: none"> <li>Indigenous Archaeology and Cultural Management Plan, Oct 2003</li> <li>Letter from DIPNR re Indigenous Archaeology and Cultural Heritage Management Plan, 11 Nov 2003</li> </ul>	(b) Archaeological investigations and collection of artefacts from the areas proposed to be disturbed on the CGM site have been conducted under Section 87 and 90 Consents issued for the project by NPWS in 2002 and 2003.	<b>Compliant</b>
<b>Flora and Fauna Assessment and Management</b>				
<b>3.4</b>	(a) The Applicant shall prior to commencement of construction prepare a fauna management plan to cover the mining lease area and monitoring of bird breeding areas as identified by the Applicant in consultation with DECCW. The plan shall be prepared in consultation with DII (Fisheries) and DECCW, and to the satisfaction of the D-G. The plan shall include, but not be limited to:	<ul style="list-style-type: none"> <li>Letter from DIPNR re Approval Flora and Fauna Management Plan, 30 Oct 2003</li> <li>Letter from DoP re Approval of the Amended Flora and Fauna Management Plan, 30 Oct 2008</li> <li>Flora and Fauna Management Plan (revised), Nov 2012</li> </ul>	(a) A Flora and Fauna Management Plan was approved by the Director General on 30 October 2003. Barrick submitted an amended Flora and Fauna Management Plan to DoP on 12 August 2008 and DoP approved the amended plan on 30 October 2008. A revised Flora and Fauna Management Plan including a Threatened Species Management Strategy was submitted to DP&I in 13 November 2012. No response had been received by Barrick from DP&I at the date of this audit.	<b>Compliant</b>
	(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 DECCW on a six monthly basis, unless otherwise directed by the Director-General;	<ul style="list-style-type: none"> <li>Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Donato Environmental Services: <ul style="list-style-type: none"> <li>Apr 2011 and Sep 2011,</li> <li>Oct 2011 and Mar 2012,</li> <li>April 2012 to Oct 2012</li> <li>Nov 2012 to Mar 2013</li> <li>April 2013 to Sep 2013</li> <li>Oct 2013 to Mar 2014</li> </ul> </li> </ul>	(i) Section 6 of the Flora and Fauna Management Plan 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).	<b>Compliant</b>
	(i) development of a protocol for the reporting of any native fauna deaths or other incidents involving native fauna on the mining lease to the DECCW, DII(Minerals), CEMCC and in the case of fish, DII(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	<ul style="list-style-type: none"> <li>Letter from DoP re Fauna Death Reporting, 13 Mar 2008</li> <li>Flora and Fauna Management Plan, revised Nov 2008</li> <li>Letter from DoP re Approval of revised Flora and Fauna Management Plan, Nov 2008</li> </ul>	(ii) The procedure for reporting of fauna deaths to the relevant authorities in the Flora and Fauna Management Plan was modified and approved by DoP on 13 March 2008. Fauna deaths are reported in the AEMR if cyanide is suspected as the causal agent. The Flora and Fauna Management Plan was amended to reflect this Modification and the Plan approved by DoP in	<b>Compliant</b>



**COWAL GOLD PROJECT - INDEPENDENT ENVIRONMENTAL AUDIT – APRIL 2012**

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	other incidents and this record shall be included in the AEMR;	<ul style="list-style-type: none"> <li>Letter from DECC re Fauna Deaths Status, 2 Feb 2009</li> <li>West Wyalong Veterinary Clinic Reports 2010 to Mar 2012</li> </ul>	<p>November 2008.</p> <p>CGM fauna reports and West Wyalong Veterinary Clinic reports were sighted for native fauna deaths recorded between May 2010 and May 2014.</p>	
	(ii) 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.	<ul style="list-style-type: none"> <li>Flora and Fauna Management Plan Section 6.3</li> <li>Letters to DPI/DECC/DoP re Native Fauna Incident Notifications, July 2008 to February 2009</li> <li>West Wyalong Veterinary Clinic Reports 2010 to Mar 2012</li> </ul>	<p>(iii) arrangement for conduct of fauna autopsies to determine the cause of death has been arranged with the West Wyalong Veterinary Clinic.</p> <p>Autopsy reports are prepared by the West Wyalong Veterinary Clinic and the reports were sighted for the May 2013 to May 2014 period.</p> <p>No deaths attributable to cyanide in the tailing storage areas were reported during the May 2010-April 2013 period.</p>	<b>Compliant</b>
	(iii) provision of 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 (refer also condition 5.3(c));	<ul style="list-style-type: none"> <li>Flora and Fauna Management Plan Section 8</li> <li>Notification forms to DECC/DPI (Minerals) and CEMCC for May 2009</li> <li>Notification forms to DECC/DPI (Minerals) and CEMCC for May 2010 to April 2011</li> <li>2011 AEMR, April 2012</li> <li>2012 AEMR, 19 April 2013</li> <li>2013 AEMR, draft</li> </ul>	<p>(iv) Cyanide levels in the discharge to the tailings storage facilities have been compliant with the approved concentration criteria for all samples collected between May 2013 and May 2014. No fauna deaths related to cyanide have been recorded for the tailings storage facilities on the CGM site.</p>	<b>Compliant Ongoing</b>
	<p>(iv) development of effective mechanisms to keep fauna and avifauna away from the tailings storages, which shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>- minimising the area of open water in the tailings dams;</li> <li>- 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;</li> <li>- making the area non conducive to the establishment of wildlife habitats, as far as possible;</li> <li>- use of netting where practical; and</li> <li>- use of current best practice methods for avifauna deterrence;</li> </ul>	<ul style="list-style-type: none"> <li>Flora and Fauna Management Plan Section 3</li> <li>Implementation Plan to Protect Fauna from Interactions with the Tailings Storage Facilities, Feb 2005</li> <li>Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Donato Environmental Services: <ul style="list-style-type: none"> <li>○ Apr 2011 and Sep 2011,</li> <li>○ Oct 2011 and Mar 2012,</li> <li>○ April 2012 to Oct 2012</li> <li>○ Nov 2012 to Mar 2013</li> <li>○ April 2013 to Sep 2013</li> <li>○ Oct 2013 to Mar 2014</li> </ul> </li> </ul>	<p>(v) A security fence was erected around the tailings storage facilities prior to tailings being discharged in 2005, to restrict the entry of fauna. The security fence entrance gate to the TSF is closed except during entrance of vehicles and equipment to the tailings facilities.</p> <p>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.</p> <p>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</p>	<b>Compliant</b>

**COWAL GOLD PROJECT - INDEPENDENT ENVIRONMENTAL AUDIT – APRIL 2012**

No.	Minister's Condition of Approval	Verification	Comments	Compliance
			with the Tailings Storage Facilities sites.	
	(v) 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;	<ul style="list-style-type: none"> <li>Flora and Fauna Management Plan Section 5</li> </ul>	(vi) A small number of birds were rescued from the tailings storage facilities during 2010 and 2013. 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.	<b>Compliant</b>
	(vi) methods to conserve and enhance wildlife values around Lake Cowal, within the mine lease area, including: protection and enhancement of existing retained habitats;	<ul style="list-style-type: none"> <li>Flora and Fauna Management Plan Section 9</li> </ul>	Refer to section 4.3 of this report on the Flora and Fauna Management Plan and the section 4.8 Land Management Plan.	<b>Compliant</b>
	(vii) provision to continue fauna and flora, fish, and aquatic invertebrate monitoring of the Lake Cowal region as documented in the EIS and SIS including investigation of fauna deaths off the Mine Site if requested by the Director-General where it is considered the deaths are attributable to activities on the Mine Site;	<ul style="list-style-type: none"> <li>Surface, Groundwater, Meteorological and Biological Monitoring Program</li> </ul>	(viii) No biological monitoring was conducted on Lake Cowal prior to April 2010 as there was no standing water in the lake at the trigger level of 204.5 AHD. Monitoring of fauna, flora, fish, and aquatic invertebrate in Lake Cowal occurred between May 2013 and May 2014 the Lake Cowal water level was above the 204.5 AHD trigger level.	<b>Compliant</b>
	(viii) 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;	<ul style="list-style-type: none"> <li>Flora and Fauna Management Plan Section 10, Oct 2008</li> <li>Flora and Fauna Management - Plan Threatened Species Management Protocol Nov 2012</li> </ul>	(ix) The Threatened Species Management Protocol was initiated during 2006 and 2007 for the relocation of active Grey-Crowned Babbler (a threatened species under the NSW <i>Threatened Species Conservation Act</i> ) 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. No threatened species were identified in areas proposed for vegetation clearance between May 2013 and May 2014.	<b>Compliant</b>
	(x) details of monitoring the mine's impacts particularly on birdlife in bird breeding areas identified by the Applicant in consultation with DECCW, threatened fauna and flora, and fish and aquatic invertebrates around Lake Cowal, and outline contingency measures should impacts be identified as occurring	<ul style="list-style-type: none"> <li>Flora and Fauna Management Plan Section 11, Oct 2008</li> <li>Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Oct 2009 to March 2010, Donato Environmental Services, Aug 2010</li> <li>Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Apr 2010 to Oct 2010, Donato Environmental Services, Feb 2011</li> <li>Waterbird Monitoring Survey</li> </ul>	(x) The fauna, flora, fish and aquatic invertebrates monitoring is 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. No monitoring of fish or aquatic invertebrates in Lake	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
		<p>Progress Report, Centre for Environmental Management University of Ballarat , Jan 2011</p> <ul style="list-style-type: none"> <li>Waterbird Monitoring Survey Progress Report, Centre for Environmental Management University of Ballarat , Aug 2011</li> </ul>	<p>Cowal occurred prior to April 2010 because there has been no standing water in Lake Cowal. 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; goldfish and the common carp.</p> <p>The Donato reports on seasonal wildlife use patterns at the CGM site did not provide evidence that suggested impacts from the mine operations on any threatened fauna on the site.</p>	
	<p>(b) The Applicant shall also implement a Threatened Species Management Protocol as outlined in Appendix 9 of the Department's primary submission to the Commission of Inquiry, which will include provisions for targeted searches prior to construction and proposed mitigation measures where threatened flora or fauna species are found;</p>	<ul style="list-style-type: none"> <li>Threatened Species Management Protocol Appendix A Flora and Fauna Management Plan Oct 2003</li> <li>Letter from DoP re Inland Greybox Woodland, 10 Aug 2007</li> <li>Letter from DECC re Inland Greybox Woodland, 27 Aug 2007</li> <li>Letter from DECC re Myall Woodland, 29 Aug 2007</li> <li>Letter from DECC re Aquatic Ecological Community, 21 Sep 2007</li> <li>Letter from DoP re Myall Woodland, 24 Sep 2007</li> <li>Letter from DoP re Aquatic Ecological Community, 12 Oct 2007</li> <li>Letter from DECCW re Threatened Species Management Strategies for Inland Forest Bat, Sloanes Froglet and Woodland Birds, 23 Feb 2011</li> </ul>	<p>(b)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.</p> <p>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.</p> <p>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.</p> <p>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&amp;I.</p> <p>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.</p>	Compliant
3.5	<b>Prevention of Soil Erosion</b>			
	<p>The Applicant shall prepare prior to commencement of construction works, in consultation with DECCW and to the satisfaction of the D-G:</p> <p>(a) an erosion and sediment control management plan for the DA area which meets the requirements of DECCW. The plan shall include, but not be limited to:</p> <p>(i) details of temporary and permanent sediment and erosion</p>	<ul style="list-style-type: none"> <li>Amended Erosion and Sediment Control Management Plan, 2004</li> <li>Revised and Amended Erosion and Sediment Control Plan Dec 2009</li> </ul>	<p>(a)The Erosion and Sediment Control Plan prepared for the CGM site development was approved in 2003, amended in 2004, and revised for submission to DoP on 23 December 2009. DoP approved the Plan on 10 March 2010.</p> <p>(i) Erosion and Sediment Control Plan section 3</p>	Compliant

No.	Minister's Condition of Approval	Verification	Comments	Compliance								
	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;	<ul style="list-style-type: none"><li>Letter from DoP re Revised Erosion and Sediment Control Plan, 10 March 2010</li></ul>	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 DA area to the requirements of <b>DII(Minerals)</b> and <b>DECCW</b> which shall include, but not be limited to: (i) details of the management of soil stockpiles, soil stripping techniques and scheduling; and (ii) 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.	<ul style="list-style-type: none"><li>Soil Stripping Management Plan Aug 2003</li><li>Erosion and Sediment Control Management Plan Section 7.1</li><li>Erosion and Sediment Control Management Plan Section 11</li><li>Infill Sampling and Results CGM Environment File Jun 2005</li><li>2008 AEMR, Mar 2009</li><li>2009 AEMR, 19 Apr 2010</li><li>2010 AEMR, May 2011</li><li>Topsoil-Subsoil Stockpile Map Apr 2010</li><li>Topsoil-Subsoil Stockpile Map Mar 2011</li><li>Topsoil-Subsoil Stockpile Map Mar 2012</li></ul>	(b)The Soil Stripping Management Plan was approve by DPNIR in 2003 and the requirements of the Soil Stripping Management Plan are used for any new areas of clearance (e.g. northern and southern waste emplacement areas and tailings storage facilities in 2010-2013). (i) A 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 has been managed in accordance with the Soil Stripping Management Plan. 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	Rehabilitation and Offset Management Rehabilitation and Offset											
	(a) The Applicant shall: (i) progressively rehabilitate the mine site in a manner that is generally consistent with the final landform in the EA (as shown in Appendix 1); (ii) maximise the salvage and beneficial use of resources in areas subject to disturbance; and (iii) implement the biodiversity offset strategy as described in the EA, and summarised in Table 1 (and shown conceptually in Appendix 2), to the satisfaction of the Director-General and DII(Minerals). <i>Table 1: Offset Strategy</i> <table><tr><td>Area</td><td>Minimum Size</td></tr><tr><td>Offset Enhancement Area</td><td>110ha</td></tr><tr><td>Offset- Revegetation Area</td><td>100ha</td></tr><tr><td>Total</td><td>210ha</td></tr></table>	Area	Minimum Size	Offset Enhancement Area	110ha	Offset- Revegetation Area	100ha	Total	210ha	<ul style="list-style-type: none"><li>Rehabilitation and Offset Strategy, Dec 2010</li><li>Letter to DP&amp;I Requesting an Extension of Time for Long Term Security Arrangements of Offset Areas, 28 Oct 2011</li><li>Letter from Barrick to DP&amp;I re Long Term Security of Offset Areas (Voluntary Conservation Agreement), 12 Dec 2011</li><li>Letter from Barrick to DP&amp;I re Long Term Security of Offset Areas (Voluntary Conservation Agreement), 19 Jun 2012</li><li>Letter to DP&amp;I re Preparation of Long Term Strategies and Post</li></ul>	(a)The Rehabilitation and Offset Management Strategy addresses the requirements of the MCoA 3.6(a) and was submitted to DoP in December 2010: (i) Section 3 addresses mine site rehabilitation (ii) Section 3.2.10 and 3.2.11 – address collection and propagation of seed and salvage and reuse of material for habitat enhancement (iii) Section 4 Offset strategy and proposed monitoring etc is addressed (b)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	Compliant
Area	Minimum Size											
Offset Enhancement Area	110ha											
Offset- Revegetation Area	100ha											
Total	210ha											

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<p>(b) By the end of December 2011, the Applicant shall make suitable arrangements to provide appropriate long term security for the offset areas to the satisfaction of the Director-General.</p> <p>(c) By the end of December 2010, the Applicant shall demonstrate that appropriate monetary bonds are, or will be, in place with applicable authorities to fully implement the offset strategy, to the satisfaction of the Director-General.</p>	<p>Mining Monitoring Program, 13 Nov 2012</p> <ul style="list-style-type: none"> <li>Letter from DECCW re Rehabilitation and Offset Management Plan, 22 Dec 2010</li> <li>Letter to DP&amp;I re Long Term Security of Offset Areas (VCA Application), 19 Jun 2012</li> <li>Letter from OoW re Rehabilitation and Offset Management Plan and Long Term Strategy, 4 Jul 2013</li> <li>Letter to DP&amp;I re VPA, 28 Apr 2014</li> </ul>	<p>Area appears to be of low conservation value and is not likely to be suitable for a Conservation Agreement. Barrick suggested to DP&amp;I a Voluntary Planning Agreement (VPA) as an appropriate mechanism for securing the offset areas.</p> <p>Barrick submitted a draft Voluntary Planning Agreement for the offset areas to DP&amp;I on 28 April 2014.</p> <p>(c) 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&amp;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&amp;I.</p> <p>Barrick is awaiting a response from DP&amp;I in relation to comment on the draft VPA, acceptance of the bank guarantee and acceptance that Barrick has satisfied the requirements of MCoA 3.6(c).</p>	
	<b>Rehabilitation and Offset Management Plan</b>			
	<p>(d) The Applicant shall prepare and implement a Rehabilitation and Offset Management Plan for the project to the satisfaction of DII and the Director-General. This plan must be prepared in consultation with DECCW, NoW and BSC, and be submitted to the Director-General and DII (Minerals) for approval by the end of July 2010.</p> <p>This plan must include:</p> <p>(i) the rehabilitation objectives for the mine site and offset areas;</p> <p>(ii) a description of the short, medium, and long term measures that would be implemented to:</p> <ul style="list-style-type: none"> <li>rehabilitate the mine site;</li> <li>implement the offset strategy; and</li> <li>manage the remnant vegetation and habitat on the mine site and in the offset areas;</li> </ul> <p>(iii) detailed performance and completion criteria for the mine site rehabilitation and implementation of the offset strategy;</p> <p>(iv) a detailed description of the measures that would be implemented, including the procedures to be implemented for:</p> <ul style="list-style-type: none"> <li>progressively rehabilitating disturbed areas;</li> <li>implementing revegetation and regeneration within the disturbance areas and offset areas, including establishment of canopy, sub-canopy (if relevant), understorey and ground strata;</li> </ul>	<ul style="list-style-type: none"> <li>Rehabilitation and Offset Management Plan, Dec 2010</li> <li>Letter from BSC re Rehabilitation and Offset Management Plan, 9 August 2010</li> <li>Letter from DII re Rehabilitation and Offset Management Plan, 18 Aug 2010</li> <li>Letter from NoW re Rehabilitation and Offset Management Plan, 27 Aug 2010</li> <li>Letter to DoP re Rehabilitation and Offset Management Plan, Dec 2010</li> <li>Letter from OoW re Rehabilitation and Offset Management Plan and Long Term Strategy, 4 Jul 2013</li> <li>Letter from DP&amp;I re Comments on Rehabilitation and Offset Management Plan, 14 Aug 2012</li> <li>Letter from OEH re Rehabilitation and Offset Management Plan, 8 Aug 2013</li> </ul>	<p>(d) The Rehabilitation and Offset Management Plan was prepared in consultation with the relevant authorities. Bland Shire Council responded to Barrick re the Rehabilitation and Offset Management Plan submitted on 30 July 2010, NoW responded on 27 August 2010, and DECCW responded on 21 December 2010 with no objections and agreement that the plan was consistent with the development consent modification.</p> <p>The document was submitted to the DP&amp;I and DII in December 2010 and comments were received from DP&amp;I on 14 August 2012 and OoW on 4 July 2013.</p> <p>A Revised ROMP and draft long-term Land Use Strategy was distributed to the BSC, OoW, EPA and, CEMCC members. Comments were then collated and submitted to the DP&amp;I and the DTRIS on 20 August 2013. Approval of the Rehabilitation and Offset Management Plan had not been received by Barrick CGM from DP&amp;I at the date of this audit (i.e. May 2014).</p> <p>(i) section 3.1.2 Rehabilitation Objectives</p> <p>(ii) Sections 3.2 and 4.2 Short, Medium and Long Term Measures</p> <p>(iii) Sections 3.3 and 4.4 Performance and Completion Criteria for Rehabilitation</p> <p>(iv) Procedures provided for:</p> <ul style="list-style-type: none"> <li>Section 3.2.1 Progressive Rehabilitation of</li> </ul>	<b>Compliant</b>



No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<ul style="list-style-type: none"> <li>protecting vegetation and soil outside the disturbance areas;</li> <li>rehabilitating creeks and drainage lines on the site (both inside and outside the disturbance areas);</li> <li>managing salinity;</li> <li>conserving and reusing topsoil;</li> <li>undertaking pre-clearance surveys;</li> <li>managing impacts on terrestrial and aquatic fauna;</li> <li>landscaping the mine site to minimise visual impacts;</li> <li>collecting and propagating seed for rehabilitation works;</li> <li>salvaging and reusing material from the mine site for habitat enhancement;</li> <li>controlling weeds and feral pests, including terrestrial and aquatic species;</li> <li>managing grazing and agriculture on site;</li> <li>controlling access; and</li> <li>bushfire management;</li> </ul> <p>(v) a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria;</p> <p>(vi) a description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and</p> <p>(vii) details of who would be responsible for monitoring, reviewing, and implementing the plan.</p>		<p>disturbed areas;</p> <ul style="list-style-type: none"> <li>Sections 3.2.2 and 4.3.1 Implementation of revegetation and regeneration</li> <li>Section 3.2.3 Protection of vegetation and soil outside disturbance areas</li> <li>Section 3.2.5 Salinity management</li> <li>Section 3.2.6 Topsoil conservation and reuse</li> <li>Section 3.2.7 Pre-clearance surveys</li> <li>Section 3.2.8 Management of impacts on terrestrial and aquatic fauna</li> <li>Section 3.2.9 Mine site landscaping</li> <li>Section 3.2.10 and 4.3.2 Collection and propagation of seed</li> <li>Section 3.2.11 and 4.3.3 Salvage and Reuse of material for habitat enhancement</li> <li>Section 3.2.12 and 4.3.4 Weed and feral pest control</li> <li>Section 3.2.15 and 4.3.7 Bushfire management</li> </ul> <p>(v) Section 3.4 and 4.5 Monitoring Program</p> <p>(vi) Section 5 Potential risks and risk treatment</p> <p>(vii) Section 6 Responsibilities for implementation, monitoring and review</p>	
<b>3.7</b>	<b><i>Deleted</i></b>			
<b>3.8</b>	<b><i>Bushfire and other Fire Controls</i></b>			
	<p>The Applicant shall:</p> <p>(a) prior to commencement of construction works prepare and submit for the approval of BSC, a bushfire management plan as outlined in section 6.4.4 of the EIS; and</p> <p>(b) provide adequate fire protection works on-site. This shall include one (1) emergency firefighting unit on site.</p> <p>(Refer also condition 5.4(a)(i)).</p>	<ul style="list-style-type: none"> <li>Bushfire Management Plan, Aug 2003</li> <li>Letter from BSC re Bushfire Management Plan, 5 Aug 2003</li> <li>Memorandum of Understanding, Bland-Temora Rural Fire Zone NSW Rural Fire Service and Cowal Gold Mine, 20 Feb 2007</li> </ul>	<p>(a) A Bushfire Management Plan was prepared and the plan approved by DMR and BSC on 24 July 2003. The Bushfire Management Plan was reviewed during 2008 and no revision of the document was required.</p> <p>(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.</p>	<b>Compliant</b>
<b>3.9</b>	<b><i>Other Land Covenants and Agreements (a)</i></b>			
	<u>Relocation of Game Reserve</u>			
	(a) The Applicant shall prior to the commencement of construction		(a) Barrick relocated a Game Reserve external to the	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	works relocate the existing game reserve in consultation with BSC, DECCW, DII(Fisheries), and lake residents and users as identified by BSC. Where public access arrangements are to be provided they shall be completed no later than the time of the reserve's relocation, to the requirements of BSC and DECCW. The total size of the new reserve(s) shall be no smaller than the existing reserve.		mining lease for "public access" and "environmental protection", on 7 November 2003. The reserve maintains public access to the lake and has an area of 123.4ha.  The "Game Reserve" status of the Crown land within ML 1535 was revoked on 19 December 2003.	<b>Complete</b>
	<b>Relocation of Travelling Stock Route</b>			
	(b) The Applicant shall, prior to the commencement of construction works on the Travelling Stock Route (TSR), relocate the TSR in accordance with the EIS and the requirements of BSC, and the Condobolin Rural Lands Protection Board, and should include appropriate fencing and stock watering facilities.	<ul style="list-style-type: none"> <li>Letter from BDW re TSR 7 Apr 2004</li> <li>Part 3A Permit No. 703A01055 under the Rivers and Foreshores Improvement Act 1948</li> </ul>	(b)Barrick obtained the requirements of BSC, DIPNR and the Condobolin Rural Lands Protection Board for the relocation of the TSR.  The new road and TSR works were completed in the 1 <sup>st</sup> quarter 2004, and Barrick transferred the land for the new TSR to the Crown as Lot 100 DP 1059150.	<b>Compliant Complete</b>
	(b) The Applicant is to ensure that all applications for road closures are finalised prior to the commencement of construction works on the land comprising the existing public roads which are to be closed. This will include the relocation of the public roads in use prior to commencement of construction works on the land comprising the existing public roads which are to be closed.	<ul style="list-style-type: none"> <li>Letter to BSC from Barrick re Closure of Council Roads, undated.</li> <li>Orange Office - Notification of Closing of a Road, NSW Government Gazette, 16 April 2004</li> </ul>	(c)Barrick lodged the road closure application with the Department of Lands for Road 1 (a public road within TSR17085 parallel to the western shore of Lake Cowal) and Road 2 (an unformed public road adjacent to the northern boundary of Portion 44). The road closures were gazetted in April 2004.	<b>Compliant Complete</b>
<b>3.10</b>	<b>Land Management</b>			
	<p>The Applicant shall:</p> <p>(A) (i) prior to commencement of construction works prepare a Land Management Plan for all its land holdings to provide for proper land management in consultation with DECCW, NoW, DII(Agriculture), and BSC, and to the satisfaction of the Director-General. The plan shall be consistent with the fauna management plan (condition 3.4) and shall include, but not be limited to:</p> <p>(a) pastures and remnant vegetation management;</p> <p>(b) control of vermin and noxious weeds as required by the Rural Lands Protection Authority, the Prickly Pear Authority and other relevant authorities;</p> <p>(c) integration of the latest versions of the Jemalong Land and Water Management Plan and the Lake Cowal Land and Water Management Plan; and</p> <p>(d) feral animal control.</p> <p>(ii) prior to commencement of construction works prepare a Compensatory Wetland Management Plan in consultation with DECCW, DII(Fisheries), Lake Cowal Landowners Association, and Lake Cowal Environmental Trust, and to the satisfaction of the Director-General. The plan shall detail compensation measures for the loss of 120 hectares of wetland, through the</p>	<ul style="list-style-type: none"> <li>Land Management Plan Oct 2008</li> <li>Compensatory Wetland Management Plan Oct 2008</li> <li>Compensatory Wetland Management Plan Section 4</li> <li>Compensatory Wetland Management Plan, 2011</li> <li>Compensatory Wetland Monitoring Report, 2012</li> <li>Compensatory Wetland Regeneration Monitoring Results Report, DnA Environmental, 2013</li> <li>Compensatory Wetland Regeneration Monitoring Results Report, DnA Environmental, Feb 2014</li> <li>Compensatory Wetland Habitat and Fish Investigation, FRC environmental Report Mar 2011</li> <li>Section 9.7</li> </ul>	<p>A(i)The 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. The Lachlan River (Jemalong Gap to Condobolin) Floodplain Management Plan (dated January 2011) has been reviewed and any relevant requirements / measures that affect the CGM Land Management Plan have been included into the Site Water Management Plan (February 2012).The Land Management Plan A(i) includes:</p> <p>(a) sections 4 and 5 address pasture and remnant vegetation management;</p> <p>(b)sections 6 and 7 address control of vermin and noxious weed control; and</p> <p>(c) section 2 integration of the Jemalong and Lake Cowal Land and Water Management Plan; and</p> <p>(d) section 7 addresses feral animal control.</p> <p>A(ii) The Compensatory Wetland Management Plan was submitted and approved by the D-G on 25 September 2003. The Plan was reviewed in 2008 and no revision was required.</p>	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<p>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:</p> <p>(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;</p> <p>(b) measures to manage the enhanced wetlands without adversely impacting adjoining private properties; and</p> <p>(c) measures to improve habitats for wildlife including waterbirds, fish, aquatic organisms etc, in the wetlands covered by the plan.</p> <p>(B) 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);</p> <p>(C) not locate topsoil stockpiles within any area of Wilga Woodland in the DA area as identified in figure 3-13 of the EIS;</p> <p>(D) not disturb any area of Belah Woodland in the DA area as identified in figure 3-13 of the EIS.</p> <p>(E) 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, DECCW, BSC, CEMCC, and to the satisfaction of the Director-General.</p>	<ul style="list-style-type: none"> <li>Vegetation Clearance Protocols: Southern Waste Emplacement, Mar 2007</li> <li>Soil Stockpile 6, Aug 2009</li> <li>Southern Waste Emplacement, Aug 2009</li> <li>Northern Waste Emplacement Aug 2009</li> <li>Soil Stockpile Areas, Nov 2012</li> <li>Northern &amp; Southern Waste Emplacement Areas, 10 Mar 2013</li> <li>Soil Stockpile Areas, Nov 2013</li> <li></li> </ul>	<p>(a) section 3 of the Compensatory Wetland Management Plan defines a wetland in accordance with the NSW Wetlands Management Policy;</p> <p>(b) section 7 addresses measures to manage the enhanced wetlands without adversely impacting adjoining private properties; and</p> <p>(c) section 6 addresses measures to improve habitats for wildlife in the wetlands covered by the plan.</p> <p>(B) 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, <i>Cowal Gold Project: Vegetation Clearance Protocol Reports</i> files.</p> <p>(C) No topsoil stockpiles had been located on Wilga Woodland areas at the time of this audit.</p> <p>(D) Belah Woodland areas within the DA had not been disturbed to the time of this audit.</p> <p>(E) The strategy for long term land use and closure plan for the mine is to be developed for submission to the relevant agencies five years before mine closure, in accordance with this condition.</p>	
<b>4</b>	<b>WATER MANAGEMENT</b>			
<b>4.1/4.2</b>	<b>Surface Water Management &amp; Ground Water Management</b>			
	<p>The Applicant shall:</p> <p>(a) prior to the commencement of construction works shall prepare a site water management plan in consultation with NoW and DECCW, and to the satisfaction of the Director-General, which shall include, but not be limited to, the following matters:</p> <p>(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,</p>	<ul style="list-style-type: none"> <li>Revised Site Water Management Plan, Dec 2006</li> <li>Letter from DoP re Amendments to Environmental Management Plan, 8 April 2010</li> <li>Letter to DoP/DECCW/NoW re Revised Site Water Management Plan, 11 Jun 2010</li> </ul>	<p>(a) The Site Water Management Plan was approved by DoP in 2003 and 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&amp;I:</p> <p>DP&amp;I provided comments on 14 August 2012. Barrick responded to the comments and submitted a revised Site Water Management Plan in August 2013.</p>	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<p>dewatering bores, Bland Creek Palaeochannel bore-field and water supply pipeline from the bore-field, which shall include preparation of monitoring programs as provided by condition 8.2.;</p> <p>(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;</p> <p>(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;</p> <p>(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;</p> <p>(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;</p> <p>(vi) measures to manage and dispose of water that may be captured behind the temporary perimeter bund during construction of that bund;</p> <p>(vii) integration of the latest versions of the Jemalong Land and Water Management Plan and the Lake Cowal Land and Water Management Plan;</p> <p>(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</p> <p>(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.</p>	<ul style="list-style-type: none"> <li>Letter from DECCW re Site Water Management Plan, 1 July 2010</li> <li>Letter from NoW re Site Water Management Plan, 24 Aug 2010</li> <li>Site Water Management Plan revision, dated Nov 2010</li> <li>Site Water Management Plan revision, dated Jul 2011</li> <li>Letter to DoP/DECCW/NoW re Revised Site Water Management Plan, 25 November 2011.</li> <li>Site Water Management Plan revision, dated Feb 2012</li> <li>Letter to DP&amp;I re Addendum to Site Water Management Plan, 17 Feb 2012</li> <li>Letter from EPA re Revised Site Water Management Plan, 27 Jan 2012</li> <li>Letter from NoW re Site Water Management Plan Revision, 14 Feb 2012</li> <li>Letter from NoW re Site Water Management Plan Revision, 6 Jun 2013</li> <li>Site Water Management Plan revision, dated Aug 2013</li> </ul>	<p>DP&amp;I approval had not been received for the revised Site Water Management Plan at the date of this audit (i.e. May 2014)</p> <p>(i) Site Water Management Plan section 4 addresses management of the quality and quantity of surface and ground water within and around the mine site;</p> <p>(ii) Site Water Management Plan section 5 addresses measures to prevent the quality of water in Lake Cowal or any surface waters;</p> <p>(iii) Site Water Management Plan section 6 addresses identification of any possible adverse effects on surrounding land holders water supply sources;</p> <p>(iv) Site Water Management Plan section 7 addresses identification of changes in flood regime on productive agricultural land in Nerang Cowal;</p> <p>(v) Site Water Management Plan section 8 addresses construction and operation of water storages;</p> <p>(vi) Site Water Management Plan section 9 addresses measures to manage and dispose of water captured behind the temporary perimeter bund;</p> <p>(vii) 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;</p> <p>(viii) Site Water Management Plan section 12 addresses measures to evaluate water quality data obtained from monitoring; and</p> <p>(ix) Site Water Management Plan section 12 addresses program for reporting the effectiveness of the water management systems and performance.</p>	
	<p>(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.;</p>	<ul style="list-style-type: none"> <li>Surface, Groundwater, Meteorological and Biological Monitoring Program, 10 Mar 2010</li> <li>Letter from DoP re Approval of the SGMBP, 10 Mar 2010</li> <li>Letter to DP&amp;I re Addendum to Surface Water, Groundwater, Meteorological and Biological Monitoring Program, 20 Feb</li> </ul>	<p>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.</p> <p>Results are reported in Appendix B of the AEMR's.</p> <p>The Surface, Groundwater, Meteorological and Biological</p>	Compliant

**COWAL GOLD PROJECT - INDEPENDENT ENVIRONMENTAL AUDIT – APRIL 2012**

No.	Minister's Condition of Approval	Verification	Comments	Compliance
		2012 <ul style="list-style-type: none"> <li>Letter from DP&amp;I re Approval of Surface Water, Groundwater, Meteorological and Biological Monitoring Program, 14 Aug 2012</li> </ul>	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.	
	(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;	<ul style="list-style-type: none"> <li>Site Water Management Plan Section 5</li> </ul>	Minimal water was present in Lake Cowal prior to April 2010, and no discharge of water from the mine site operational areas had occurred. 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 since April 2010 following filling of the Lake, with quarterly water quality monitoring for full parameter suite analysis and sediment monitoring in Lake Cowal conducted in accordance with the Plan.	<b>Compliant</b>
	(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;	<ul style="list-style-type: none"> <li>Site Water Management Plan Section 6</li> </ul>	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 Trgilana 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.	<b>Compliant</b>
	(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	<ul style="list-style-type: none"> <li>Site Water Management plan Section 7</li> </ul>	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	<b>Compliant</b>



**COWAL GOLD PROJECT - INDEPENDENT ENVIRONMENTAL AUDIT – APRIL 2012**

No.	Minister's Condition of Approval	Verification	Comments	Compliance
			land. Discussions have continued between 2010 and 2014 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.	
	(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;	<ul style="list-style-type: none"> <li>Preliminary Earthworks for Mine Development , URS, 23 Apr 2004</li> <li>Contained Water Storage Facilities, URS 10 Jun 2004</li> </ul>	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 water collected is recovered for use in the process plant or on site for dust suppression.	<b>Compliant</b>
	(vi) measures to manage and dispose of water that may be captured behind the temporary perimeter bund during construction of that bund;	<ul style="list-style-type: none"> <li>Site Water Management Plan Section 9</li> </ul>	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.	<b>Compliant</b>
	(vii) integration of the latest versions of the Jemalong Land and Water Management Plan and the Lake Cowal Land and Water Management Plan	<ul style="list-style-type: none"> <li>Site Water Management Plan Section 10</li> </ul>	The Site Water Management Plan Section 10 considers the requirements of the Jemalong and the Lake Cowal Land and Water Management Plans.	<b>Compliant</b>
	(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	<ul style="list-style-type: none"> <li>Surface, Groundwater, Meteorological and Biological Monitoring Program, Section 4.2 and 5.2</li> <li>Groundwater Monitoring Review 2013, Coffey, 26 May 2014</li> </ul>	Evaluation of water quality data collected between May 2010 and May 2014 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).	<b>Compliant</b>
	(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.	<ul style="list-style-type: none"> <li>Site Water Management Plan Section 12</li> <li>Notice of Modification, DoP, 23 Aug 2007</li> <li>Surface, Groundwater,</li> </ul>	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.	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
		<p>Meteorological and Biological Monitoring Report, Appendix B, draft AEMR 2007.</p> <ul style="list-style-type: none"> <li>Site Water Management Revised, Nov 2010</li> <li>Site Water Management Plan Revised, Feb 2012</li> </ul>	<p>An amendment to the use of Jemalong water source was approved by a Notice of Modification granted on 23 August 2006.</p> <p>The CGM water management systems are monitored and assessed annually and reported in the AEMR. Revisions of the Site Water Management Plan occurred in 2010-12 were submitted to the relevant authorities for approval.</p> <p>Water management has occurred in accordance with the general objectives contained in the EIS and Site Water Management Plan.</p>	
	<p>(b) develop 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 borefield (refer condition 4.4), 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, DECCW, DII (Minerals), and CEMCC, and to the satisfaction of the Director-General.</p>	<ul style="list-style-type: none"> <li>Site Water Management Plan Section 11</li> <li>Strategy for Decommissioning of CGM Water Management Structures, May 2013</li> </ul>	<p>This matter will be addressed in the Mine Closure Plan for the project, when it is developed.</p> <p>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&amp;I on 8 August 2013.</p>	<b>Noted</b>
	<p>(c) (i) construct the Lake protection bund and site water and tailings storages to the requirements of NoW, DECCW and DSC;</p> <p>(ii) provide a geotechnical report on pit/void wall construction/ stability to DII(Minerals) prior to commencement of mining operations and construct pit/void in accordance with the requirements of DII(Minerals);</p>	<ul style="list-style-type: none"> <li>Site Water Management Plan Section 4.1</li> <li>Lake Protection Bund Operation and Maintenance Manual, Jun 2005</li> <li>2006 Surveillance Report for Lake Protection Bund, URS, 11 Dec 2006</li> <li>Rock Armour Suitability Geotechnical Assessment for the Cowal Gold Mine, Geo-Environmental Management, Dec 2008</li> <li>Geotechnical Assessment of Bund and Pit Walls, Dr Neil Matte URS, 2010-2013</li> </ul>	<p>A geotechnical report on the pit/void wall construction/ stability was prepared by URS and submitted to DPI in 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.</p> <p>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.</p> <p>A geotechnical assessment of the bund and pit walls is conducted annually by Dr Neil Matte of URS to assess stability.</p>	<b>Compliant</b>
<b>4.3</b>	<b>Catchment Areas and Watercourses</b>			
	<p>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</p>	<ul style="list-style-type: none"> <li>Site Water Management Plan Section 10</li> </ul>	<p>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 included where</p>	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	catchment/land and water management plans that may become relevant to the area.		relevant in the Site Water Management Plan and its revisions.	
<b>4.4</b>	<b><i>Water Supply</i></b>			
	<u>Bland Creek Palaeochannel water supply</u> (a) The maximum daily extraction of water from the Bland Creek Palaeochannel shall not exceed 15ML/day, and not exceed 3650ML/year. A total extraction of 30,000ML shall not be exceeded for the life of the mine, unless otherwise agreed by the Director-General, in consultation with NoW. All bores from the Bland Creek Palaeochannel bore-field used for mine purposes must be metered.	<ul style="list-style-type: none"> <li>Bore Licence Certificates No. 70BL229248, 70BL229249, 70BL229250, and 70BL229251 (production bores)</li> </ul>	Barrick was granted Bore License Certificates under Section 115 of the <i>Water Act 1912</i> for water supply from the Bland Creek Palaeochannel in 2003.  The water extraction from the Palaeochannel is metered and recorded continuously, with the data collected daily by the CGM Process Engineer.  Water extraction from the Bland Creek Palaeochannel bore-field has not exceeded 15ML/day or 3650 ML extracted in any year.  Extraction from the Bland Creek Palaeochannel bore-field was significantly reduced during the May 2010 to May 2013 due to the increased rainfall, availability of water from the onsite storage ponds and recovery of supernatant from the tailings storage facilities.	<b>Compliant</b>
	(b) The water pipeline from the Bland Creek Palaeochannel bore-field to the mine site shall be: (i) constructed in accordance with the requirements of NoW, and in consultation with <i>DII(Fisheries)</i> ; and (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.	<ul style="list-style-type: none"> <li>Permit under Part 3A of the Rivers and Foreshores Improvement Act 1948 No. 703A010056</li> </ul>	The pipeline construction across Lake Cowal and along the alignment to the east of the lake towards the production bores occurred in 2004 and 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. The pipeline trench was backfilled and an access track along the route established to inspect the trench and pipeline and for access to the groundwater monitoring bores across the lake bed.	<b>Compliant (Complete)</b>
	(c) The water supply shall be installed 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.		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 2013 and May 2014.	<b>Compliant</b>
	(d) Leases or private agreements shall be completed with the relevant landholders for the land requirement for pipeline infrastructure prior to commencement of water pipeline construction. (Refer condition 4.1/4.2(vi) for strategy for pipeline decommissioning).	<ul style="list-style-type: none"> <li>Part 3A Permit Application 24 Mar 2004</li> <li>Enclosure Permit No. 353669 DLWC</li> <li>Deed of Agreement for Pipeline Easement, 19 June 2003</li> </ul>	Easement Agreements were provided for land along the pipeline route for which Barrick was not the Registered Proprietor including: <ul style="list-style-type: none"> <li>Lot 18, DP753097, Lots 44, 45, 46 and 47, DP42918</li> <li>TSR84719 public roads vested in Forbes Shire Council</li> </ul>	<b>Compliant</b>
<b>4.4A</b>	<b><i>Saline Groundwater Supply Bore-field</i></b>			
	(a) The water pipelines from the saline groundwater supply borefield to the mine site shall be: (i) constructed in accordance with the requirements of the NoW.	<ul style="list-style-type: none"> <li>Water Licence 70BL233231 dated 11 Jun 2011</li> <li>Water Licence 70BL233233 dated 11 Jun 2011</li> </ul>	(i) Saline groundwater supply bores were established during 2011 and approval as production bores was obtained from NoW (Water Licence 70BL233231 and 70BL233233) dated 11 June 2011).	<b>Compliant Ongoing</b>

**COWAL GOLD PROJECT - INDEPENDENT ENVIRONMENTAL AUDIT – APRIL 2012**

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	(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.		(ii)The saline bore supply pipeline has been constructed so as not to impede the passage of fish or other animals, or interfere with flood behaviour or the passage of boats and vehicles.	
	(b)The water supply shall be installed 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.		When the saline water supply was constructed, automatic shutdown devices were installed so water pumping could be immediately stopped in the event of a pipe rupture.	<b>Noted</b>
<b>4.5</b>	<b><i>Disposal of Excess Water</i></b>			
	There shall be no disposal of water from the internal catchment drainage system to Lake Cowal under any circumstances.	<ul style="list-style-type: none"> <li>Site Water Management Plan, Feb 2012</li> </ul>	<p>The Site Water Management Plan section 4.2.1 describes the lake isolation system for water management that 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).</p> <p>No release of water to Lake Cowal from the CGM internal catchment system occurred between May 2013 and May 2014.</p> <p>Water from Lake Cowal entered the area between the temporary isolation bund and the lake protection bund on 11 March 2012 due to the rise in lake water above the 206.70mRL. The Lake Cowal water levels in May 2014 had reduced to below the trigger level of 205.4mRL and the water level was again below the top of the Temporary Isolation Bund.</p>	<b>Compliant</b>
<b>5</b>	<b>HAZARDOUS MATERIALS AND TAILINGS MANAGEMENT</b>			
<b>5.1</b>	<b><i>Waste Rock Emplacement and Management</i></b>			
	The Applicant shall construct and manage the waste rock emplacement as set out in the documentation listed in condition 1.1(a), and to the satisfaction of DI&I (Minerals).	<ul style="list-style-type: none"> <li>Mining Operations Plan Jan 2011 to Sep 2012,</li> <li>Variation to MOP Jan 2011 to Sep 2012</li> </ul>	The waste rock emplacements are being established in accordance with the MOP.	<b>Compliant</b>
<b>5.2</b>	<b><i>Tailings Emplacement and Management</i></b>			
	<p>The Applicant shall:</p> <p>(a) construct the tailings dams to the requirements of, DII(Minerals), DECCW and DSC and in consultation with NoW;</p> <p>(b) construct and compact the floor of the tailings storages as required to a permeability acceptable to the DII(Minerals) and DECCW in consultation with NoW;</p>	<ul style="list-style-type: none"> <li>Letter to DEC re Permeability Test Report for NTSF, Dec 2004</li> <li>Letter to DEC re Permeability Test Report for STSF, Dec 2005</li> <li>Letter from Dam Safety Committee re STSF Stage 2 Construction, 9 Jan 2009</li> <li>Reservoir D9, CGM, Dam Break and Probable Loss of Life,</li> </ul>	<p>(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.</p> <p>When the Stage 2 STSF construction was complete, and Stage 2 lift on the NTSF commenced. The Dam Safety Committee provided a response to the Construction Report in January 2009 advising that the</p>	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
		<p>Coffey Geotechnics, 19 Apr 2011</p> <ul style="list-style-type: none"> <li>Letter to DSC re Coffey Report, 21 Jun 2011</li> <li>Letter from DS re Endorsement of D9 Dam Type 2 Surveillance Report, 29 Jun 2011</li> <li>NTSF Surveillance Report 2013, URS, 18 Dec 2013</li> <li>STSF Surveillance Report, URS, 18 Mar 2014</li> </ul>	<p>review satisfies the Committee's requirements. The TSF's continue to be developed with the pumping of tailings being alternated between the NTSF and STSF as the facilities are filled and additional lifts are constructed.</p> <p>(b) Permeability Test Reports were submitted to DEC and DPI and DIPNR (LWC).</p>	
<b>5.3</b>	<b><i>Management of Retained Water – Cyanide Management</i></b>			
	<p>(a) <u>Cyanide levels</u></p> <p>The Applicant shall ensure that cyanide levels of the aqueous component of the tailings slurry stream do not exceed: 20mg CN<sub>WAD/L</sub> (90 percentile over six months), and 30mg CN<sub>WAD/L</sub> (maximum permissible limit at any time), at the discharge point to the tailings storages.</p>	<ul style="list-style-type: none"> <li>Letters and Data to DoP/DII-Minerals/DECC re Monthly Cyanide Monitoring, April 2007 to Mar 2010</li> <li>Letters to DII/DoP/DECCW re Monthly Cyanide Monitoring Results, April 2010 to March 2012</li> </ul>	<p>The cyanide levels in the slurry stream have not exceeded &lt;20mg CN<sub>WAD/L</sub> (90 percentile) or 30mg CN<sub>WAD/L</sub> (maximum permissible limit) between May 2013 and May 2014.</p> <p>CN<sub>WAD</sub> levels at the CGM STSF and NTSF have been forwarded to DP&amp;I/DI&amp;I-Minerals/OEH and the CEMCC quarterly between May 2010 and April 2013.</p>	<b>Compliant</b>
	<p>(b) <u>Cyanide management</u></p> <p>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:</p> <ul style="list-style-type: none"> <li>(i) containing cyanide contaminated waters entirely within the mine site;</li> <li>(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);</li> <li>(iii) contingency measures for cyanide reduction. (Refer condition 8.2(b) for cyanide monitoring details).</li> </ul>	<ul style="list-style-type: none"> <li>Letter from DECC re Addendum to Cyanide Management Plan, 24 Aug 2007</li> <li>Letter from DWE re Addendum to Cyanide Management Plan, 17 Sep 2007</li> <li>Letter from DWE re Addendum to Cyanide Management Plan, 21 Jul 2008</li> <li>Letter from DoP re Approval of Cyanide Management Plan, 30 October 2008</li> <li>Letter from DoP re Amendments to Cyanide Management Plan, 24 Mar 2010</li> <li>Letter from DECCW re Proposed Change to Cyanide Monitoring Point, 11 Jun 2010</li> <li>Letter from NoW re Addendum to Cyanide Management Plan, 23 Aug 2010</li> <li>Letter from DoP re Proposed Amendments to Cyanide Management Plan, 20 Dec 2010</li> <li>Letter from DoP re Addendum</li> </ul>	<p>The Cyanide Management Plan prepared in accordance with MCoA 5.3(b) was approved by the Director-General of DoP on 9 January 2006.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>A change of the transport route between the Queensland Border and Dubbo (via Goondiwindi) was approved by DPI/DoP on 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.</p> <p>The cyanide levels in the slurry stream have not exceeded 20mg CN<sub>WAD/L</sub> (90 percentile) or 30mg CN<sub>WAD/L</sub> (maximum</p>	<b>Compliant</b>




No.	Minister's Condition of Approval	Verification	Comments	Compliance
		to Transport of Hazardous Material Study, 1 Dec 2010	permissible limit) between May 2013 and May 2014..	
	(c) In the event of wildlife deaths occurring due to cyanide, review of cyanide levels shall occur by the DECCW in consultation with the Applicant and DII(Minerals). 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.	<ul style="list-style-type: none"> <li>Letter from DECC re Fauna Reporting Protocol, Feb 2009</li> <li>Seasonal Wildlife Use Pattern of the CGM Tailings Facility, Donato Environmental Services:               <ul style="list-style-type: none"> <li>Apr 2010 to Sep 2010</li> <li>Oct 2010 to March 2011</li> <li>Apr 2011 to Sep 2011</li> <li>Oct 2011 to March 2012</li> <li>Apr 2012 to Sep 2012</li> <li>Oct 2012 to March 2013</li> </ul> </li> </ul>	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 cyanide in the tailings storage facilities have occurred between May 2013 and May 2014.	<b>Compliant</b>
<b>5.4</b>	<b>Fuel, Oil and other Chemical Handling</b>		<i>Note: The development consent conditions under 5.4(a)-(f) are related to offsite risk to people and the biophysical environment. The safety of all persons and operations on site is the responsibility of the DII(Minerals) under the Mines Inspection Act and Dangerous Goods Act.</i>	
	<p>(i) <b>Fire Safety Study</b></p> <p>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.</p> <p>The study should, in particular, address the fire related issues associated with the storage and use of Ammonium Nitrate, Sodium Isobutyl xanthate, and Cyanide.</p>	<ul style="list-style-type: none"> <li>Letter to NSW Fire Brigades – Submission of Fire Safety Study for approval, 22 Dec 2004</li> <li>Letter to DIPNR – Submission of Fire Safety Study, 22 Dec 2004</li> <li>Letter from NSW Fire Brigades re Satisfaction with the Fire Safety Study, 15 September 2005</li> </ul>	<p>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 MCoA 5.4.</p> <p>The NSW Fire Brigades provided a letter expressing satisfaction with the fire safety measures within the study in September 2005.</p> <p>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.</p>	<b>Compliant Complete</b>
	<p>(ii) <b>Hazard and Operability Study</b></p> <p>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.</p>	<ul style="list-style-type: none"> <li>Letter to DIPNR – Submission of HAZOP Study, 22 Dec 2004</li> <li>Letter from DoP re HAZOP Supplementary Studies, Sep 2005</li> <li>Letter from Barrick to DoP re HAZOP Study Action Closeout Status, 16 Jan 2006HAZOP Supplementary Studies</li> </ul>	<p>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.</p> <p>Supplementary HAZOP Studies for the oxygen system, LPG system and cyanide leach package was notified to be to the satisfaction of the Director-General in Jan 2006.</p>	<b>Compliant Complete</b>
	<p>(iii) <b>Final Hazard Analysis</b></p> <p>The analysis should be prepared in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 6, "Guidelines for Hazard Analysis".</p>	<ul style="list-style-type: none"> <li>Final Hazard Analysis, 2004</li> <li>Letter to DIPNR – Submission of Final Hazard Analysis, 22 Dec 2004</li> <li>Letter from DIPNR re Fire Hazard Analysis, 30 Mar 2005</li> </ul>	<p>The Final Hazard Analysis was prepared by CGM and submitted to DIPNR on 22 December 2004.</p> <p>The Final Hazard Analysis was approved by DIPNR in March 2005.</p>	<b>Compliant Complete</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<b>(b) Pre-Commissioning Studies</b>			
	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.	<b>Compliant Complete</b>
	<p>(i) <i>Transport of Hazardous Materials</i></p> <p>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.</p> <p>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</p>	<ul style="list-style-type: none"> <li>• Transport of Hazardous Material Study, 2006</li> <li>• Letter from DoP re Approval of Transport of Hazardous Materials Plan, 9 Jan 2006</li> <li>• Letter from DoP re Approval for Transport of Flotation Chemicals, 28 Feb 2007</li> <li>• Letter re Interim Approval from DoP re Transport of SIBX, 20 Sep 2007</li> <li>• Letter from DoP re Addendum to Transport of Hazardous Materials Study, 13 Oct 2010</li> <li>• Letter from DoP re Addendum to Transport of Hazardous Materials Study, 1 Dec 2010</li> <li>• Letter from DP&amp;I re Notification of Change to Transport of Hazardous Chemicals (Ammonium Nitrate), 13 Jan 2012</li> <li>• Emails to DP&amp;I re Emergency Routing of Sodium Cyanide to CGM due to Road Conditions, Mar 2012</li> </ul>	<p>Route evaluation for hazardous materials studies conducted and consultation with the affected Councils occurred in accordance with Guideline No.9.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>An amendment to the route for the transport of hydrogen peroxide from the Solvay Interlox Banksmeadow facility to CGM was proposed and accepted by DoP on 13 October 2010.</p> <p>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.</p> <p>Approval for a change to the transport route for Ammonium Nitrate by road from Maxam Australia Depot Goulburn to CGM endorsed by DP&amp;I on 13 January 2012.</p> <p>Emergency route change permission was sought and granted by DP&amp;I in November 2011, and in January and March 2012 due to road conditions following heavy rainfall events.</p>	<b>Compliant</b>
	<p>(ii) <i>Emergency Plan</i></p> <p>A comprehensive emergency plan and detailed emergency procedures for the proposed development. This plan shall 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</p>	<ul style="list-style-type: none"> <li>• Letter from DoP re Approval of the Operations Emergency Management Plan, 14 Dec 2005</li> <li>• Emergency Response Plan Cowal Gold Project, Mar 2007</li> <li>• Letter from DoP re updated</li> </ul>	<p>The Operations Emergency Plan was approved by DoP on 14 December 2005.</p> <p>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.</p>	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	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 Plan, 18 Jun 2008 <ul style="list-style-type: none"> <li>Emergency Response Plan, 4 Oct 2013</li> <li>Letter to DP&amp;I re Emergency Response Plan Revision, 4 Oct 2013</li> </ul>	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 2013 and May 2014.	
	(iii) <i>Safety Management System</i>  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".	<ul style="list-style-type: none"> <li>Safety Management System Oct 2005</li> <li>Letter from DoP re Approval of the Safety Management System, 14 Dec 2005</li> <li>Revised Safety Management System Feb 2007</li> <li>Safety Management Plan Cowal Gold Project, Mar 2007</li> <li>Letter from DoP re updated Safety Management System, 18 Jun 2009</li> </ul>	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.	<b>Compliant</b>
	(c) <u>Compliance Reports</u> One month prior to the commencement of operation of the plant, the Applicant shall submit to the Director-General, a compliance report detailing compliance with conditions 5.4(a) and 5.4(b), including: (i) dates of study submission, approval, commencement of construction and commissioning; (ii) actions taken or proposed, to implement recommendations made in the studies; and (iii) responses to each requirement imposed by the Director-General under condition 5.4(f).	<ul style="list-style-type: none"> <li>Pre-Operation Compliance Report, Feb 2006</li> <li>Letter to Director-General re Pre-operation Compliance Report, 16 Feb 2006.</li> <li>Letter from Director-General re Acceptance of Compliance Report, 6 Mar 2006</li> </ul>	The Compliance Report was prepared and submitted to the Director-General on 16 February 2006 in accordance with MCoA 5.4(c) prior to the commencement of operation of the plant.	<b>Compliant Complete</b>
	(d) <u>Incident Report</u> Within 24 hours or the next working day of any incident or potential incident with actual or potential significant off-site impacts on people, or the biophysical environment (including wildlife), report shall be supplied to the Director-General outlining the basic facts and mitigation measures undertaken at the time. A further detailed report shall be prepared and submitted following investigations of the causes and identification of necessary additional preventative measures. The report must be submitted to the Director-General no later than 14 days after the incident or potential accident. The Applicant shall maintain a register of such accidents, incidents, and potential incidents. The register shall be made available for inspection at any time by the independent hazard auditor and the Director-General.		No incidents related to on-site activities with actual or potential for significant off-site impact were reportable to DoP/DP&I between May 2013 and May 2014.	<b>Compliant Ongoing</b>

**COWAL GOLD PROJECT - INDEPENDENT ENVIRONMENTAL AUDIT – APRIL 2012**

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<p>(e) <u>Hazard Audit</u>  Twelve months after the commencement of operations of the proposed development or within such further period as the Director-General may agree, the Applicant shall carry out a comprehensive hazard audit of the proposed development and submit a report of the audit to the Director-General.</p> <p>The audit shall be carried out at the Applicant's expense by a duly qualified independent person or team approved by the Director-General prior to commencement of the audit. Further audits shall be carried out every three years or as determined by the Director-General and a report of each audit shall within a month of the audit be submitted to the Director-General. Hazard audits should be carried out in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 5, "Hazard Audit Guidelines".</p>	<ul style="list-style-type: none"> <li>Hazard Audit Report, Cowal Gold Project, Pinnacle Risk Management Pty Ltd, 6 Jun 2007</li> <li>Letter from DoP re Approval of the 2010 Hazard Audit Report, 15 Feb 2011</li> <li>Hazard Audit Report Cowal Gold Project, Pinnacle Risk Management Pty Ltd, 11 Apr 2013</li> </ul>	<p>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.</p> <p>The second Hazard Audit of the CGM operations was conducted on 19-22 April 2010.</p> <p>The third Hazard Audit Report of the CGM operations was conducted on 11 April 2013.</p>	<b>Compliant</b>
	<p>(f) <u>Further requirements</u>  The Applicant shall comply with all reasonable requirements of the Director-General in respect of the implementation of any measures arising from the approvals given in respect of conditions 5.4(a) - 5.4(e) above, within such time as the Director General may agree.</p>		No further requirements in relation to MCoA 5.4(a) – 5.4(e) were advised by the Director-General between May 2013 and May 2014.	<b>Noted</b>
<b>5.5</b>	<b><i>Domestic Waste</i></b>			
	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.	<b>Compliant</b>
<b>5.6</b>	<b><i>Sewage and Associated Waste Management</i></b>			
	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.	<ul style="list-style-type: none"> <li>Construction Certificate No.6, 4 Apr 2005 for Package Sewage Treatment Plant, DIPNR</li> </ul>	The permanent on-site sewage management system was installed west of the Mine Workshop and Administration Complex in the 1 <sup>st</sup> quarter 2006 in accordance with the requirements of the Department of Health, BSC and DECCW.	<b>Compliant</b>
			 <p align="center"><b>CGM Package Sewage Treatment Plant</b></p>	

No.	Minister's Condition of Approval	Verification	Comments	Compliance
<b>5.7</b>	<b><i>Asbestos and Other Hazardous or Toxic Waste Management</i></b>			
	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 Director-General.	<ul style="list-style-type: none"> <li>Letter from DECC re Addendum to HWCMP, 6 Dec 2007</li> <li>Letter from DECC re Hazardous Waste Management Plan, 30 Apr 2009</li> <li>Letter from DECC re Hazardous Waste Management Plan, 22 Dec 2009</li> <li>Letter from DoP re Amended Hazardous Waste Management Plan, 10 Mar 2010</li> <li>Letter from DECCW re Hazardous Waste and Chemical Management Plan, 23 Feb 2011</li> <li>Letter from DP&amp;I re Update to Hazardous Waste and Chemical Management Plan, 13 May 2011</li> <li>Letter from BSC re Update to Hazardous Waste and Chemical Management Plan, 19 Apr 2011</li> </ul>	<p>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.</p> <p>Amendments to the Hazardous Waste and Chemical Management Plan were approved by DoP on 10 March 2010.</p> <p>DECCW responded on 3 February 2011 to the revised Hazardous Waste and Chemical Management Plan with no objections to the changes.</p> <p>BSC accepted the revised Hazardous Waste and Chemical Management Plan on 19 April 2011 and DP&amp;I approved the revised document on 13 May 2011.</p>	<b>Compliant</b>
<b>6</b>	<b>AIR QUALITY, BLAST, NOISE AND LIGHT MANAGEMENT</b>			
<b>6.1</b>	<b><i>Air Quality Management</i></b>			
	(a) The Applicant shall prior to commencement of construction works prepare a dust management plan detailing air quality safeguards and procedures for dealing with dust emissions in consultation with the DECCW and to the satisfaction of the Director-General. The management plan shall be updated as required by the Director-General and/or DECCW. The plan shall include, but not be limited to, details of: locations for dust monitoring (in accordance with Australian Standard), including location gauges near the Gumbelah residence, and bird breeding and native flora areas determined by the Applicant in consultation with the DECCW;	<ul style="list-style-type: none"> <li>Amendment to Dust Management Plan, Dec 2008</li> <li>Letter from DoP re Dust Management Plan Amendment Approval, 25 Feb 2009</li> <li>Dust Management Plan 2009</li> </ul>	<p>(a) A Dust Management Plan was approved by the Director-General in August 2003.</p> <p>Amendments to the Dust Management Plan were approved by DoP in August 2007 and February 2009.</p>	<b>Compliant</b>
	<p>(b) methods to determine when and how the mine operation is to be modified to minimise the potential for dust emissions.</p> <p>(c) measures to continue baseline monitoring undertaken prior to development consent. (Refer condition 8.3 for air quality monitoring details)</p>	<ul style="list-style-type: none"> <li>Dust Management Plan S. 5</li> <li>Dust Management Plan S. 7</li> </ul>	<p>(b) Dust monitoring has continued and the results are independently reviewed annually by Dr Stephen Cattle and reported in the AEMR.</p> <p>(c) Baseline monitoring of dust has continued with the dust deposition gauges maintained and samples collected each month. Dust monitoring results are reviewed by Dr Stephen Cattle (University of Sydney) annually and the results of the review and monitoring data are</p>	<b>Compliant</b>



No.	Minister's Condition of Approval	Verification	Comments	Compliance																							
			included in the AEMR's section 3.1.3.1. Dust monitoring has continued at the sites specified in EPL condition P1.1.																								
	<p>(d) The Applicant shall ensure that the dust emissions generated by the development do not cause additional exceedances of the air quality impact assessment criteria listed in Tables 2, 3 and 4 at any residence on privately-owned land, or on more than 25% of privately-owned land not located within Lake Cowal, as shown in Appendix 3.</p> <p>(e)</p> <p><i>Table 2: Long term impact assessment criteria for particulate matter</i></p> <table><tr><th>Pollutant</th><th>Averaging Period</th><th>Criterion</th></tr><tr><td>Total suspended particulate (TSP) matter</td><td>Annual</td><td>90 µg/m<sup>3</sup></td></tr><tr><td>Particulate matter &lt;10µm (PM<sub>10</sub>)</td><td>Annual</td><td>30 µg/m<sup>3</sup></td></tr></table> <p><i>Table 3: Short term impact assessment criterion for particulate matter</i></p> <table><tr><th>Pollutant</th><th>24 hour</th><th>Criterion</th></tr><tr><td>Particulate matter &lt;10µm (PM<sub>10</sub>)</td><td>24 hour</td><td>50 µg/m<sup>3</sup></td></tr></table> <p><i>Table 4: Long term impact assessment criteria for deposited dust</i></p> <table><tr><th>Pollutant</th><th>Averaging Period</th><th>Max increase in deposited dust level</th><th>Max total deposited dust level</th></tr><tr><td>Deposited dust</td><td>Annual</td><td>2g/m<sup>2</sup>/mth</td><td>4g/m<sup>2</sup>/mth</td></tr></table>	Pollutant	Averaging Period	Criterion	Total suspended particulate (TSP) matter	Annual	90 µg/m <sup>3</sup>	Particulate matter <10µm (PM <sub>10</sub> )	Annual	30 µg/m <sup>3</sup>	Pollutant	24 hour	Criterion	Particulate matter <10µm (PM <sub>10</sub> )	24 hour	50 µg/m <sup>3</sup>	Pollutant	Averaging Period	Max increase in deposited dust level	Max total deposited dust level	Deposited dust	Annual	2g/m <sup>2</sup> /mth	4g/m <sup>2</sup> /mth	<ul style="list-style-type: none"><li>• Interpretation and Discussion of 2010 Air Quality Monitoring Results, CGM, Prof. Stephen Cattle Uni of Sydney</li><li>• Interpretation and Discussion of 2011 Air Quality Monitoring Results, CGM, Prof. Stephen Cattle Uni of Sydney</li><li>• Interpretation and Discussion of 2012 Air Quality Monitoring Results, CGM, Prof. Stephen Cattle Uni of Sydney</li></ul>	<p>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 MCoA 6.1(c).</p> <p>Monitoring of dust deposition and PM<sub>10</sub> 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.</p> <p>The dust monitoring results have generally been compliant with the criteria in MCoA 6.1(d).</p> <p>The eight dust gauges external to the mine lease area have exhibited significant proportion of combustible matter such as 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<sup>2</sup>/mth.</p> <p>The HVAS located north of the mine lease area demonstrated TSP levels below the criterion in Table 2 (i.e. less than 90µg/m<sup>3</sup>) between May 2013 and May 2014.</p>	Compliant
Pollutant	Averaging Period	Criterion																									
Total suspended particulate (TSP) matter	Annual	90 µg/m <sup>3</sup>																									
Particulate matter <10µm (PM <sub>10</sub> )	Annual	30 µg/m <sup>3</sup>																									
Pollutant	24 hour	Criterion																									
Particulate matter <10µm (PM <sub>10</sub> )	24 hour	50 µg/m <sup>3</sup>																									
Pollutant	Averaging Period	Max increase in deposited dust level	Max total deposited dust level																								
Deposited dust	Annual	2g/m <sup>2</sup> /mth	4g/m <sup>2</sup> /mth																								
6.2	Dust Suppression and Control																										
	<p>The Applicant shall:</p> <p>(i) maintain and use sufficient equipment with the capacity to apply water to all unsealed trafficked areas at a rate which minimises dust emissions;</p> <p>(ii) ensure the prompt and effective rehabilitation of all disturbed areas to minimise generation of wind erosion dust, in accordance with the requirements of DII(Minerals);</p> <p>(iii) keep the surface of all stockpiles sufficiently treated to minimise windblown dust.</p>	<ul style="list-style-type: none"><li>• Letter from DoP re Addendum to Dust Management Plan, 31 August 2007.</li><li>• Amendment to Dust Management Plan, Dec 2008</li><li>• Letter to DoP re Amendment to Dust Management Plan, 19 Dec 2008</li><li>• Letter from DoP re Dust Management Plan Amendment Approval, 25 Feb 2009</li></ul>	<p>Water tankers are available on site for the control of dust on roads and other disturbed areas subject to traffic movements.</p> <p>DoP accepted the amendments to the Dust Management Plan in 2007, 2008 and 2009 in relation to monitoring locations and dust mitigation techniques for the site.</p> <p>PetroTac surface treatment has been applied to the internal roads near the entrance to the operational site area and in front of the administration building for dust control. PetroTac treatment is generally applied to these areas each 1-2 months.</p>	Compliant																							

No.	Minister's Condition of Approval	Verification	Comments	Compliance																							
	<b>Vibration</b>																										
	<b>Blasting Impact Assessment Criteria</b>																										
6.3	<p>(a) The Applicant shall ensure that blasting at the project does not exceed the criteria in Table 5.</p> <p><i>Table 5: Blasting impact assessment criteria</i></p> <table border="1"> <thead> <tr> <th>Location</th><th>Time of Blasting</th><th>Air-blast over pressure dBL</th><th>Ground Vibration mm/s</th><th>Allowable exceedance</th></tr> </thead> <tbody> <tr> <td rowspan="5">Residence on privately owned land</td><td>Any time</td><td>120</td><td>10</td><td>0%</td></tr> <tr> <td>Day</td><td>115</td><td>5</td><td rowspan="4">5% of total number of blasts over a period of 12 months</td></tr> <tr> <td>Evening</td><td>105</td><td>2</td></tr> <tr> <td>Night</td><td>95</td><td>1</td></tr> <tr> <td>Sundays &amp; Public Holidays</td><td>95</td><td>1</td></tr> </tbody> </table>	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%	Day	115	5	5% of total number of blasts over a period of 12 months	Evening	105	2	Night	95	1	Sundays & Public Holidays	95	1	<ul style="list-style-type: none"> <li>Blast Monthly Reports – January, February and March 2014</li> <li>Review of Blast Monitoring Report 2013, The Saros Group, Mar 2014</li> <li>Review of Blast Monitoring Report 2012, The Saros Group, Mar 2013</li> </ul>	<p>The 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 MCoA 6.3(a).</p> <p>No blast overpressure results exceeded 120dBL, and overpressure results greater than 115dBL accounting for less than 5% of the total blasts.</p> <p>No night time blasts have occurred between May 2013 and May 2014.</p> <p>Exceedence of the 95dB(L) criteria (MCoA 6.3(a)) occurred from five (5) blasts on Sundays and Public Holidays between May 2013 and May 2014.</p>	Compliant
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%																							
	Day	115	5	5% of total number of blasts over a period of 12 months																							
	Evening	105	2																								
	Night	95	1																								
	Sundays & Public Holidays	95	1																								
	<b>Blast Management Plan</b>																										
6.3	<p>(b) The Applicant shall prepare and implement a Blast Management Plan for the project in consultation with DECCW and to the satisfaction of the D-G. This plan must be submitted to the D-G for approval by the end of July 2010 and include provisions to:</p> <p>(i) evaluate blasting impacts on, and demonstrate compliance with the blasting criteria in this approval for privately-owned residences and structures;</p> <p>(ii) implement best blasting practice to:</p> <ul style="list-style-type: none"> <li>protect the safety of people, property, public infrastructure, and livestock; and</li> <li>minimise disturbance to bird breeding. and</li> </ul> <p>(iii) ensure that blast monitoring data is assessed regularly, and that operations are relocated, modified and/or stopped as required to ensure compliance with the relevant blast criteria.</p>	<ul style="list-style-type: none"> <li>Revised Blast Management Plan 2009</li> <li>Letter from DECC re revised Blast Management Plan, 30 April 2009</li> <li>Letter to DECCW re Revised Blast Management Plan, 11 Jun 2010</li> </ul>	<p>The Blast Management Plan was revised in 2009 to ensure that the requirements of amended condition 6.3(b) were addressed. The revised Blast Management Plan was submitted to the relevant authorities on 11 June 2010 and was accepted by DECCW and DIL. Barrick had not received notification of approval of the revised Blast Management Plan from DP&amp;I at the date of this audit (i.e. May 2014).</p>	Compliant																							
	<b>Public Notice</b>																										
6.3	<p>(c) The Applicant shall advise residents within two (2) kilometres of the active mining area of future blasting events on a monthly basis, and of any changes to monthly programs.</p> <p>(d) Upon written request of the owner of any dwellings located within two (2) kilometres of the active mining area, the Applicant shall arrange at its own costs, for the inspection by a technically qualified person agreed to by both parties, to record the material condition of any structure on such property within 14 days of</p>		<p>There are no private dwellings located within 2 kilometres of the current active mining area.</p>	Compliant																							

No.	Minister's Condition of Approval	Verification	Comments	Compliance										
	receipt of the request. The Applicant shall supply a copy of any inspection report, certified by the person who undertook the inspection, to the relevant property owner within fourteen (14) days of receipt of the report.													
	Acquisition Upon Request													
6.4	(a) Upon receiving a written request for acquisition from the owner of any land listed in Table 6 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 6: Land subject to acquisition upon request  Coniston McLintock West Lea.		This condition had not been activated at the date of this audit. There had been no exceedence of the criteria. No requests for acquisition have been received by CGM up to April 2013.	Not activated										
6.4	(b) If the noise generated by the development exceeds the criteria in Table 7 at any residence on privately-owned land, or on more than 25 % of privately-owned land not located within Lake Cowal (as shown in Appendix 3), the Applicant shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in If the noise generated by the development exceeds the criteria in Table 7 at any residence on privately-owned land, or on more than 25 % of privately-owned land not located within Lake Cowal (as shown in Appendix 3), the Applicant shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in condition 11 of Schedule 2.  Table 7: Land acquisition criteria dB(A) LAeq (15min) <table><tr><th>Location</th><th>Day/Evening/Night</th></tr><tr><td>All privately-owned land (excluding land in Table 6)</td><td>40</td></tr></table>	Location	Day/Evening/Night	All privately-owned land (excluding land in Table 6)	40		This condition had not been activated at the date of this audit. There has been no exceedance of the criteria. The quarterly noise monitoring has demonstrated that the noise levels at the residences listed in Table 6 have not exceeded 40dB(A) during the 2010 to 2013 period.	Not activated						
Location	Day/Evening/Night													
All privately-owned land (excluding land in Table 6)	40													
	Noise Impact Assessment Criteria													
6.4	(c) The Applicant shall ensure that the noise generated by the development does not exceed the noise impact assessment criteria in Table 8 at any residence on privately-owned land, or on more than 25 % of privately-owned land not located within Lake Cowal.  Table 8: Noise Impact Assessment Criteria dB(A) LAeq (15min) <table><tr><th>Location</th><th>Day/Evening/Night</th></tr><tr><td>Bungabulla</td><td>39</td></tr><tr><td>Coniston</td><td>44</td></tr><tr><td>Cowal North</td><td>38</td></tr><tr><td>Gumbelah</td><td>39</td></tr></table>	Location	Day/Evening/Night	Bungabulla	39	Coniston	44	Cowal North	38	Gumbelah	39	<ul style="list-style-type: none"><li>Cowal Gold Mine – Mine Operations Noise Monitoring, Jul 2012, SLR</li><li>Noise Mitigation Deed – ‘Laurel Park’, 13 Aug 2012</li><li>Cowal Gold Mine – Mine Operations Noise Monitoring, Jan-Feb 2013, SLR</li><li>Noise Mitigation Deed – ‘Gumbelah’, 9 Dec 2013</li><li>Letter to DP&amp;I re Noise Mitigation Deed- Gumbelah’, 16 Dec 2014</li></ul>	The quarterly SLR monitoring reports for mine operation noise between 2010 and 2014 have concluded that: <i>“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.”</i>  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).	Compliant
Location	Day/Evening/Night													
Bungabulla	39													
Coniston	44													
Cowal North	38													
Gumbelah	39													

No.	Minister's Condition of Approval			Verification	Comments	Compliance													
	<table><tr><td>Lake Cowal (non-Barrick)</td><td>38</td></tr><tr><td>Laurel Park</td><td>39</td></tr><tr><td>Mattiske</td><td>36</td></tr><tr><td>McLintock</td><td>41</td></tr><tr><td>The Glenn</td><td>38</td></tr><tr><td>West Lea</td><td>41</td></tr><tr><td>All other residences</td><td>35</td></tr></table> <ul style="list-style-type: none"><li>To interpret the locations referred to in Table 8, see Appendix 3.</li><li>Noise generated by the project is to be measured in accordance with the relevant requirements, and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy.</li><li>The noise limits do not apply if the Applicant has an agreement with the relevant owner/s of these residences/land to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement.</li></ul>	Lake Cowal (non-Barrick)	38	Laurel Park	39	Mattiske	36	McLintock	41	The Glenn	38	West Lea	41	All other residences	35		<ul style="list-style-type: none"><li>Noise Mitigation Deed – 'Cowal North', 16 Jan 2014</li><li>Letter to DP&amp;I re Noise Mitigation Deed- Cowal North, 17 Jan 2014</li><li>Letter to DP&amp;I re Noise Mitigation Deed – Laurel Park, 3 Feb 2014</li><li></li></ul>		
Lake Cowal (non-Barrick)	38																		
Laurel Park	39																		
Mattiske	36																		
McLintock	41																		
The Glenn	38																		
West Lea	41																		
All other residences	35																		
	Traffic Noise Impact Assessment Criteria																		
6.4	<p>(d) The Applicant shall take all reasonable and feasible measures to ensure that the traffic noise generated by the project does not exceed the traffic noise impact assessment criteria in Table 9.</p> <p>Table 9: Traffic noise criteria dB(A) LAeq (1 hour)</p> <table><tr><td>Road</td><td>Day/Evening</td><td>Night</td></tr><tr><td>Ungarie Road</td><td>60</td><td>55</td></tr><tr><td>Wamboyne Rd, Blow Clear Rd, Carrawandool-Warroo Rd, Burcher Rd, Condobolin Rd, Lake Cowal Rd</td><td>55</td><td>50</td></tr></table> <p>Note: Traffic noise generated by the project is to be measured in accordance with the relevant procedures in DECCW's Environmental Criteria for Road Traffic Noise.</p>			Road	Day/Evening	Night	Ungarie Road	60	55	Wamboyne Rd, Blow Clear Rd, Carrawandool-Warroo Rd, Burcher Rd, Condobolin Rd, Lake Cowal Rd	55	50	<ul style="list-style-type: none"><li>Cowal Gold Mine – Traffic Noise Monitoring, Jan-Feb 2012, SLR</li><li>Cowal Gold Mine – Traffic Noise Monitoring, Jan-Feb 2013, SLR</li><li>Letter to Director-General DP&amp;I re Agreements with Residents Affected by Traffic Noise, 3 Sep 2012</li><li>Letters of Agreement re Traffic Noise Exceedence, dated 27 Aug 2012 signed by:<ul style="list-style-type: none"><li>Mr Maitland and Ms Davies, 142 Ungarie Road</li><li>Mr &amp; Mrs O'Connor Mid-Western Highway</li><li>Mr &amp; Mrs Kremer 116 Ungarie Road</li><li>Mr Bischoff 88 Wamboyne Road</li><li>Mrs Anderson 56 Wamboyne Road</li><li>Mr &amp; Mrs Apolony 156 Ungarie Road</li><li>Mr Jamieson &amp; Ms Ridley 154 Ungarie Road</li></ul></li></ul>	<p>The monitoring of traffic noise has been conducted annually by SLR in January 2012 and January / February 2013.</p> <p>Barrick has implemented reasonable and feasible measures to reduce mine related traffic noise, such as restricting delivery times to the site to outside of the peak staff changeover times and providing bus transport from West Wyalong to the site for employees to reduce the number of private vehicles travelling to and from the mine site.</p> <p>No traffic noise complaints were received during the period May 2013 to May 2014.</p> <p>Barrick entered into Agreements with potentially affected residents in September 2012 and notified DP&amp;I of the terms of agreement on 3 September 2012. No response or acknowledgement had been received from DP&amp;I at the date of this audit.</p>	Compliant				
Road	Day/Evening	Night																	
Ungarie Road	60	55																	
Wamboyne Rd, Blow Clear Rd, Carrawandool-Warroo Rd, Burcher Rd, Condobolin Rd, Lake Cowal Rd	55	50																	

No.	Minister's Condition of Approval	Verification	Comments	Compliance
6.4	(e) Truck movements for material delivery purposes will be restricted as far as practicable to the day and evening periods.			Noted
	<b>Additional Noise Mitigation Measures</b>			
6.4	<p>(f) Upon receiving a written request from:</p> <ul style="list-style-type: none"> <li>the landowner of the properties in Table 6 (unless the landowner has requested acquisition);</li> <li>the landowner of the properties identified as: <ul style="list-style-type: none"> <li>Bungabulla;</li> <li>Gumbelah;</li> <li>Laurel Park;</li> <li>The Glen;</li> <li>Cowal North; and</li> <li>Lake Cowal (non-Barrick).</li> </ul> </li> <li>the landowner of privately-owned land where subsequent operational noise monitoring shows the noise generated by the project exceeds the noise limits in Table 8 by more than: <ul style="list-style-type: none"> <li>1 dB(A), in the case of the location identified as Mattiske; and</li> <li>2 dB(A), in the case of all other locations;</li> </ul> </li> </ul> <p>the Applicant shall implement additional noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner.</p> <p>In the event that other landowners consider that noise at their dwelling which is located along the mine access road between the Mid-Western Highway and the mine site, is in excess of the relevant criteria in Table 9, and the Director-General, in consultation with the DECCW, is satisfied that an investigation is required, the Applicant shall upon receipt of a written request:</p> <ul style="list-style-type: none"> <li>appoint a qualified independent person to undertake direct discussions with the landowners affected to ascertain their concerns and to plan and implement an investigation to quantify the impact and determine the sources of the effect, and</li> <li>where the project is identified as the cause/source bear the cost of the independent investigation and if exceedences are identified implement additional noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner. These additional mitigation measures shall be approved by BSC prior to implementation</li> </ul> <p>These additional mitigation measures must be reasonable and feasible.</p> <p>If, within 3 months of receiving this request from the landowner, the Applicant and the landowner 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 Director-General for resolution.</p>	<p>Communication with DP&amp;I (Executive Director Sam Haddad) and Shane Goodwin Barrick COW.400.05.2885SG, 5 Sept 2012</p>	<p>No written requests to activate this condition have been received by Barrick.</p> <p>Barrick entered into Agreements with residents affected by traffic noise in September 2012 and notified DP&amp;I of the terms of agreement on 3 September 2012 (see comments in 6.4(d) above).</p>	Not activated



No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<p>At least 3 months prior to increasing the mobile equipment fleet as described in the EA, the Applicant shall notify the following landowners that they may be entitled to receive additional noise mitigation measures, to the satisfaction of the Director-General:</p> <ul style="list-style-type: none"> <li>Bungabulla;</li> <li>Gumbelah;</li> <li>Laurel Park;</li> <li>The Glen;</li> <li>Cowal North; and</li> <li>Lake Cowal (non-Barrick).</li> </ul>			
	<b>Noise Management Plan</b>			
<b>6.4</b>	<p>(g) The Applicant shall prepare and implement a Noise Management Plan for the project in consultation with DECCW and to the satisfaction of the Director-General. This plan must be submitted to the Director-General for approval by the end of July 2010 and include provisions to:</p> <ul style="list-style-type: none"> <li>(i) evaluate noise impacts on privately-owned residences</li> <li>(ii) demonstrate compliance with the noise impact assessment criteria in Table 8;</li> <li>(iii) implement all reasonable and feasible noise mitigation measures;</li> <li>(iv) investigate ways to reduce the noise generated by the project, including: <ul style="list-style-type: none"> <li>off-site road noise; and</li> <li>noise levels which may result in sleep disturbance and disturbance to bird breeding behaviour; and</li> </ul> </li> <li>(iv) report on these investigations and the implementation and effectiveness of these measures in the AEMR</li> </ul>	<ul style="list-style-type: none"> <li>Letter from DoP re Amendments to Noise Management Plan, August 2007</li> <li>Letter from DECC re Addendum to Noise Management Plan, 21 Sep 2009</li> <li>Letter from DoP re Amendment to the Noise Management Plan, 8 April 2010</li> <li>Noise Management Plan, July 2010</li> </ul>	<p>The Noise Management Plan approved in 2003 was revised and amended in 2007 and 2009.</p> <p>The 5 year revision of the Noise Management Plan was submitted to the DoP on 28 September 2009 and approved on 8 April 2010.</p> <p>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&amp;I at on 14 August 2012.</p> <p>A revised Noise Management Plan addressing the DP&amp;I comments was submitted to DP&amp;I on 24 December 2012. No response had been received by Barrick from DP&amp;I at the date of this audit.</p>	<b>Compliant</b>
<b>6.5</b>	<b>Visual Amenity and Lighting</b>			
	<p>The Applicant shall take all reasonable and feasible measures, in consideration of Australian Standard <i>AS 4282-1997 Control of the obtrusive effects of outdoor lighting</i>, to mitigate visual and off-site lighting impacts of the project, to the satisfaction of the Director-General.</p>	<ul style="list-style-type: none"> <li>Complaints Register 2012</li> </ul>	<p>No other complaints related to lighting were received between May 2013 and May 2014</p>	<b>Compliant</b>
<b>7</b>	<b>TRANSPORT AND UTILITIES</b>			
<b>7.1</b>	<b>Road Transport</b>			
	<p><u>Mine site access road</u></p> <ul style="list-style-type: none"> <li>(i) 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.</li> <li>(ii) The mine access road upgrade shall be undertaken in accordance with the approval issued by BSC under Part 5 of the Environmental Planning and Assessment Act, 1979.</li> </ul>	<ul style="list-style-type: none"> <li>Bland Shire Council Decision - Notification of Approval of CGM Access Road Upgrade, 21 Apr 99</li> <li>Letter to BSC re Mine Access Road, 31 Jan 05</li> </ul>	<p>The access road route to the mine site from West Wyalong was approved by the Bland Shire Council in 1999 and the road works were completed and in use in 2006.</p> <p>Access to the CGM site by employees and contractors has been along the new road since late 2006.</p>	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	(Refer also to conditions 2.2 and 5.4(b)).			
8	<b>MONITORING/AUDITING</b>			
	Monitoring programs in conditions 8.1 - 8.6 below are to be revised/updated annually, unless otherwise directed by the Director-General, to reflect changing environmental requirements significant changes in technology/operational practices and results from monitoring conducted. Changes shall be made and approved through the <b>AEMR</b> process. All monitoring programs shall also be made publicly available at BSC within two weeks of approval of the relevant government authority.	<ul style="list-style-type: none"> <li>Independent Monitoring Panel Report, March 2006</li> <li>Independent Monitoring Panel Report, August 2007</li> <li>Fourth Independent Monitoring Panel Report, October 2008</li> <li>Letter from DoP re Approval of Surface and Groundwater, Meteorological and Biological Monitoring Program – Operations Phase, 10 March 2010</li> </ul>	<p>An independent review of the Surface Water, Groundwater, Meteorological &amp; Biological Monitoring Plan was conducted by Professor David Fox (Environmetrics, Melbourne), as recommended by the Independent Monitoring Panel (IMP Report 2006-2007), and the review submitted to Barrick in June 2008. The Program was further reviewed by Dr David Goldney and the revised Program approved by DoP in March 2010.</p> <p>Development of investigative triggers and effective responses to any detected adverse effects (as recommended by the IMP Report), were included in the revised Surface Water, Groundwater, Meteorological and Biological Monitoring Program – Operations Phase, 10 March 2010.</p> <p>The approved Surface Water, Groundwater, Meteorological and Biological Monitoring Program March 2010 has been implemented.</p>	<b>Compliant</b>
8.1	<b>Meteorological</b>			
	The Applicant shall continue meteorological monitoring by utilising and maintaining the existing weather station on site. The data shall be particularly used for predicting noise, dust and blasting impacts on nearby residences, and bird breeding areas identified by the Applicant in consultation with <b>DECCW</b> .	<ul style="list-style-type: none"> <li>Cowal Calibration Report, Sentinel Pty Ltd, Jul, Sep, Dec 2013 and Mar 2014</li> <li>Monthly Weather Station Reports – January 2013 to March 2014, Sentinel Pty Ltd</li> </ul>	<p>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.</p> <p>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.</p>	<b>Compliant</b>
8.2	<b>Surface and Ground Water and Cyanide</b>			
	<p>(a) <u>Water monitoring</u></p> <p>①The Applicant shall construct and locate:</p> <p>(a) surface water monitoring positions in consultation with <b>NoW and DECCW</b>, and to the satisfaction of the Director-General, at least three months prior to the commencement of construction works unless otherwise directed by the Director-General; and</p> <p>(b) groundwater monitoring positions in consultation with <b>NoW and DECCW</b>, and to the satisfaction of the Director-General at least six months prior to the commencement of construction works unless otherwise directed by the Director-General.</p>	<ul style="list-style-type: none"> <li>Letter re DoP Approval of Surface Water, Groundwater, Meteorological &amp; Biological Monitoring Program, 10 Mar 2010</li> <li>Letter from DPI-NoW re Post-Mine Surface Water, Groundwater, Meteorological and Biological Monitoring Program, 6 Jun 2013</li> <li>Letter from DPI-NoW re Post-Mine Surface Water,</li> </ul>	<p>(a)(i)(a)Surface and groundwater monitoring locations were approved by the Director-General in March 2003.</p> <p>(a)(i)(b)Groundwater monitoring has been conducted in accordance with the EPL conditions P1.3 and M2.1.</p> <p>The independent review of the Surface Water, Groundwater, Meteorological &amp; Biological Monitoring Program as recommended by the Independent Monitoring Panel concluded:</p> <p><i>"it provides a robust program of monitoring that will contribute to the assessment of the effectiveness of environmental impact mitigation measures during the</i></p>	<b>Compliant</b>

**COWAL GOLD PROJECT - INDEPENDENT ENVIRONMENTAL AUDIT – APRIL 2012**

No.	Minister's Condition of Approval	Verification	Comments	Compliance
		Groundwater, Meteorological and Biological Monitoring Program, 16 Sep 2013	<i>operations phase of the Project".</i> Conformance with the water monitoring program has occurred between May 2013 and May 2014 with water sampling on the mine site and in the Lake Cowal area conducted in accordance with the revised Surface Water, Groundwater, Meteorological & Biological Monitoring Program.	
	(ii) The Applicant shall prepare a detailed monitoring program in respect of ground and surface water, including water in the up catchment diversion system, internal catchment drainage system, dewatering bores, Bland Creek Palaeochannel borefield and water supply pipeline from borefield, pit/void, Lake Cowal, and any other waters in and around the mine site, during construction works, mine operations and post mine operations in consultation with NoW, DECCW, DII (Fisheries) and to the satisfaction of the Director-General. The monitoring program during construction works shall be prepared prior to commencement of construction. The monitoring program during mine operation shall be prepared prior to commencement of mine operation. The monitoring program post mine operations shall be prepared by year 7 of mine operations.	<ul style="list-style-type: none"> <li>Surface Water, Groundwater, Meteorological and Biological Monitoring Program – Mining Operation Phase, Mar 2010</li> <li>Letter from DoP re Approval of Revised Surface Water, Groundwater, Meteorological and Biological Monitoring Program, Mar 2010</li> </ul>	<p>The Surface Water, Groundwater, Meteorological and Biological Monitoring Program - Mining Operations Phase approved by DoP in 2003 was revised and approved by DoP on 10 March 2010.</p> <p>The ground and surface water monitoring program for the mine site and in the Lake Cowal area has been conducted in accordance with the Surface Water, Groundwater, Meteorological &amp; Biological Monitoring Program and MCoA 8.2(a)(ii).</p>	<b>Compliant</b>
	(iii) 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 DECCW, and in the case of biological monitoring DII(Fisheries). NoW and DECCW must be satisfied as to sampling design, including sample locations, sample frequency, sample handling, transport and analysis, sampling parameters and reporting of analysis results.	<ul style="list-style-type: none"> <li>Surface Water, Groundwater, Meteorological and Biological Monitoring Program – Operations Phase, Mar 2010</li> </ul>	<p>The Surface Water, Groundwater, Meteorological and Biological Monitoring Program was revised and approved by DoP on 10 March 2010.</p> <p>Surface water and biological monitoring of Lake Cowal waters has been conducted since the water in the lake reached the trigger level of 204.5m AHD.</p> <p>The rainfall events between May 2010 and April 2013 resulted in the water levels in Lake Cowal above the trigger level. The Lake water level in May 2014 was less than the trigger level on 204.5m AHD and the monitoring programs were being reviewed to account for the low water level.</p>	<b>Compliant</b>
	(iv) The results and interpretation of surface and ground water monitoring (including biological monitoring) are to be provided by the Applicant in an approved form to the NoW, DECCW and DII(Fisheries) on a three monthly basis during construction and the first 12 months of ore processing operations and thereafter on an annual basis, unless otherwise agreed by the Director-General. The results are also to be contained and analysed in the Annual Environmental Management Report (Condition 9.2(a)).	<ul style="list-style-type: none"> <li>Monitoring Data Reports to DECC, DoP and DPI - Jan to Mar, Apr-Jun, Jul-Sep, Oct-Dec 2007 to 2009</li> <li>Cyanide Monitoring Reports to DECC, DoP and DPI (Minerals), monthly May 2007 to Mar 2010</li> </ul>	<p>The surface and groundwater monitoring results have been provided to the EPA/DECCW/OEH, DoP/DP&amp;I and DII (Fisheries) in accordance with this condition.</p> <p>Reporting of all monitoring results (including cyanide monitoring) also occurs to the relevant authorities in the AEMR and EPA Annual Return.</p>	<b>Compliant</b>
	(v) the Applicant shall prior to commencement of construction works prepare in consultation with NoW and DII(Minerals) and to the satisfaction of the Director-General, 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	<ul style="list-style-type: none"> <li>Monitoring Program for the Detection of any Movement of the Lake Protection Bund, Water Storage and Tailings Structures and Pit/Void Walls,</li> </ul>	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.	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance															
	the mine, with particular emphasis on monitoring after any seismic events.	Dec 200 • 2009 AEMR 19 April 2010 • 2010 draft AEMR May 2011	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.																
	(b) <u>Cyanide monitoring</u>																		
	The Applicant shall prior to any tailings disposal prepare a cyanide monitoring program in consultation with the DECCW and DII(Minerals), and to the satisfaction of the Director-General . The plan shall include, but not be limited to, provision for:		The cyanide monitoring program required under MCoA 8.2(b) was approved as part of the Cyanide Management Plan (MCoA 5.3(b) by DoP on 9 January 2006.	Compliant															
	(i) monitoring of CN <sub>WAD</sub> 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 Director-General, with any increases above 20mg CNWAD/L to be assessed daily to ensure compliance and reported monthly to the DII(Minerals) and DECCW, unless otherwise agreed by the Director- General. If the CNWAD levels of 30mg/L are exceeded in the liquid at any time, discharge to the tailings dams shall cease until CNWAD levels can be achieved below the levels stated in condition 5.3(a) and such exceedance shall be reported to the DECCW within 24 hours; (ii) monitoring CNWAD levels in the decant water of the tailings dams twice daily or as otherwise directed by the Director-General;	• Cyanide Management Plan, section 6.2 • Process Plant Cyanide Monitoring Data, Barrick Cyanide Management Plan, section 6.2 • Cyanide Monitoring Results, Monthly Reports, April 2010 to March 2011 • Cyanide Monitoring Results, Monthly Reports, April 2011 to March 2012	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 <sub>WAD</sub> /L between May 2013 and May 2014 <table><tr><th>Period</th><th>&gt;20mg CN<sub>WAD</sub>/L</th><th>&gt;30mg CN<sub>WAD</sub>/L</th></tr><tr><td>Mar-Jun 2013</td><td>0</td><td>0</td></tr><tr><td>Jun-Sep2013</td><td>0</td><td>0</td></tr><tr><td>Sep-Dec2013</td><td>0</td><td>0</td></tr><tr><td>Jan-Mar2014</td><td>0</td><td>0</td></tr></table>		Period	>20mg CN <sub>WAD</sub> /L	>30mg CN <sub>WAD</sub> /L	Mar-Jun 2013	0	0	Jun-Sep2013	0	0	Sep-Dec2013	0	0	Jan-Mar2014	0	0
Period	>20mg CN <sub>WAD</sub> /L	>30mg CN <sub>WAD</sub> /L																	
Mar-Jun 2013	0	0																	
Jun-Sep2013	0	0																	
Sep-Dec2013	0	0																	
Jan-Mar2014	0	0																	
	(v) an on-site laboratory for quickly establishing CN <sub>WAD</sub> levels in the liquid at the discharge point to tailings dams and in the decant ponds for monitoring purposes;	• Cyanide Management Plan, section 6.3	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).																
	(vi) on-line monitoring of CN <sub>(FREE)</sub> at locations where employees are operating	• Cyanide Management Plan, section 6.4	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.	Compliant															
	A summary of the cyanide monitoring results shall be provided to the Director-General, DECCW and DII(Minerals) on a three monthly basis, unless otherwise agreed by the Director-General. All results shall be included in the AEMR.	• 2009 AEMR 19 Apr 2010 • Letters to DoP, DECCW, DII re Monthly Cyanide Monitoring Results, May 2010 to April 2013	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 <sub>WAD</sub> /L they would be reported immediately to the DRE and OEH).	Compliant															

No.	Minister's Condition of Approval	Verification	Comments	Compliance
<b>8.3</b>	<b><i>Air Quality and Dust</i></b>			
	<p>The Applicant shall:</p> <p>(a) undertake monitoring at locations described in the dust management plan (condition 6.1);</p> <p>(b) monitor dust deposition rates and concentrations of total suspended particulates (TSP) for the life of the mine, including monitoring impacts of dust on any surface water within the high water mark of Lake Cowal; and</p> <p>(c) provide all results and analysis of air quality monitoring in the AEMR including a determination of the dust deposition rate in gm/m<sup>2</sup>/month, which shall be plotted in the AEMR.</p>	<ul style="list-style-type: none"> <li>Letter to DoP re Amended Dust Management Plan, 9 August 2007</li> <li>Dust Management Plan Feb 2009</li> <li>2009 AEMR, May 2010</li> <li>2010 AEMR, Aug 2011</li> <li>2011 AEMR, Jul 2012</li> <li>2012 AEMR, draft Apr 2013</li> <li>Interpretation and Discussion of Air Quality Monitoring Results, Uni of Sydney, Dr Stephen Cattle 2010 2011, 2011, 2012</li> </ul>	<p>(a) Dust deposition gauges have been installed at the locations identified in the Dust Management Plan. Some dust deposition gauges and 'frisbees' were recovered due to the depth of water in Lake Cowal after the lake filled in 2010.</p> <p>A high volume air sampler operates at the nearest residences (sensitive receptor) and operates on a 6 day cycle for TSP.</p> <p>(b) 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.</p> <p>Dust monitoring around the CGM area is reported in the AEMR. Dust deposition monitoring at six sites and PM<sub>10</sub> monitoring at the locations specified in the EPL condition P1.1, has continued.</p> <p>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.</p> <p>(c) The dust monitoring results, independently reviewed by Dr Stephen Cattle, University of Sydney, are presented in the AEMR.</p>	<b>Compliant</b>
<b>8.4</b>	<b><i>Deleted</i></b>			
<b>8.5</b>	<b><i>Fauna and Flora Monitoring</i></b>			
	<p>The Applicant shall monitor the effectiveness of measures outlined in the fauna management plan and Threatened Species Protocol (condition 3.4). A summary of monitoring results shall be included in the AEMR.</p>	<ul style="list-style-type: none"> <li>Flora and Fauna Management Plan Nov 2012</li> <li>Threatened Species Management Protocol, Nov 2012</li> <li>Vegetation Clearance Protocol Implementation Report, Sep 2005</li> <li>2009 AEMR, 19 Apr 2010</li> <li>2010 AEMR, May 2011</li> <li>2011 AEMR May 2012</li> <li>2012 AEMR Apr 2013</li> <li>2013 AEMR draft</li> </ul>	<p>The management of flora and fauna under the Flora and Fauna Management Plan and the Threatened Species Management Protocol is reported in the AEMR in sections 3.7 and 3.8 respectively.</p> <p>Vegetation clearance activities have been conducted in accordance with the Vegetation Clearance Protocol, and weed and pest management and flora monitoring in accordance with the FFMP.</p>	<b>Compliant</b>
<b>8.6</b>	<b><i>Cultural Heritage Monitoring</i></b>			
	<p>The Applicant shall monitor the effectiveness of measures outlined in the archaeology and heritage management plan (condition 3.3). A summary of monitoring results shall be included in the AEMR.</p>	<ul style="list-style-type: none"> <li>Indigenous Archaeology and Cultural Heritage Management Plan 2003</li> <li>2010 AEMR, May 2011</li> </ul>	<p>The management of Aboriginal heritage has been undertaken in accordance with the Indigenous Aboriginal and Cultural Heritage Management Plan. The management actions and registered sites/items are</p>	<b>Compliant</b>



No.	Minister's Condition of Approval	Verification	Comments	Compliance
		<ul style="list-style-type: none"> <li>2011 AEMR May 2012</li> <li>2012 AEMR Apr 2013 (draft)</li> <li>Letter from Bland Shire Council re Heritage Advisors Report, 6 March 2009</li> </ul>	<p>reported in the AEMR section 3.13.</p> <p>European Heritage is managed under the Heritage Management Plan with any actions reported in section 3.14 of the AEMR's. During 2010-11 the homestead and other buildings on the CGM lease site north of the southern waste emplacement area were monitored and plans to dismantle and recover sections of the structures for restoration were developed.</p> <p>The Shearing Shed was dismantled during 2011/12 and relocated to the Lake Cowal Foundation site at Hillgrove for re-construction. Re-construction was completed in April 2013.</p>	
<b>8.7</b>	<b><i>Community Consultative Committee</i></b>			
	<p>Community Environmental Monitoring and Consultative Committee</p> <p>The Applicant shall:</p> <p>(i) establish a Community Environmental Monitoring and Consultative Committee and ensure that the first meeting is held before the commencement of construction works. Selection of representatives shall be agreed by the Director-General and the appointment of an independent Chairperson shall be to the satisfaction of the Director-General in consultation with the Applicant and BSC. The Committee shall comprise two (2) representatives of the Applicant (including the Environmental Officer), one (1) representative of BSC, one (1) representative of the Lake Cowal Environmental Trust (but not a Trust representative of the Applicant), four community representatives (including one member of the Lake Cowal Landholders Association), to monitor compliance with conditions of this consent and other matters relevant to the operation of the mine during the term of the consent.</p> <p>Representatives from relevant government agencies (including DUAP) may be invited to attend meetings as required by the Chairperson. The Committee may make comments and recommendations about the implementation of the development and environmental management plans. The Applicant shall ensure that the Committee has access to the necessary plans for such purposes. The Applicant shall consider the recommendations and comments of the Committee and provide a response to the Committee and Director-General.</p> <p>(ii) The Applicant shall, at its own expense:</p> <ol style="list-style-type: none"> <li>nominate two (2) representatives to attend all meetings of the Committee;</li> <li>provide to the Committee regular information on the progress of work and monitoring results;</li> <li>promptly provide to the Committee such other information as the Chair of the Committee may reasonably request concerning the</li> </ol>	<ul style="list-style-type: none"> <li>Charter of the CEMCC</li> <li>CEMCC Minutes 3 Mar 2010</li> <li>CEMCC Minutes 9 Jun 2010</li> <li>CEMCC Minutes 1 Sep 2010</li> <li>CEMCC Minutes 1 Dec 2010</li> <li>CEMCC Minutes 2 Mar 2011</li> <li>CEMCC Minutes 9 Jun 2011</li> <li>CEMCC Minutes 1 Sep 2011</li> <li>CEMCC Minutes 5 Dec 2011</li> <li>CEMCC Minutes 29 Feb 2012</li> <li>CEMCC Minutes 9 May 2012</li> <li>CEMCC Minutes Sep 2012</li> <li>CEMCC Minutes 5 Dec 2012</li> <li>CEMCC Minutes 6 Mar 2013</li> <li>CEMCC Minutes 5 Jun 2013</li> <li>CEMCC Minutes 5 Sep 2013</li> <li>CEMCC Minutes 5 Dec 2013</li> <li>CEMCC Minutes 5 Mar 2014</li> </ul>	<p>(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.</p> <p>(ii)(a) Garry Pearson (Environment Manager), Bronwyn Flynn (Environmental Co-ordinator) and Shane Goodwin (Community Relations Manager) nominated Barrick representatives.</p> <p>(b) Copies of complaints and other relevant documentation is provided as required to the CEMCC.</p> <p>(c) Barrick supply information to the Committee as requested, on environmental performance.</p> <p>(d) Site inspections are arranged as requested by the CEMCC</p> <p>(e) The CEMCC Meetings are held at the CGM site offices.</p> <p>(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.</p> <p>(iv) Not yet applicable.</p>	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<p>environmental performance of the development;</p> <p>d) provide access for site inspections by the Committee;</p> <p>e) provide meeting facilities for the Committee, and take minutes of Committee meetings. These minutes shall be available for public inspection at BSC within 14 days of the meeting.</p> <p>(iii) The Applicant shall establish a trust fund to be managed by the Chair of the Committee to facilitate the functioning of the Committee, 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 Director-General.</p> <p>(vii) 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 mine operations.</p> <p>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.</p>			
<b>8.8</b>	<b><i>Third Party Monitoring/Auditing</i></b>			
	<p>(a) An Independent Environmental Audit shall be completed:</p> <ul style="list-style-type: none"> <li>• six monthly during construction;</li> <li>• 12 months after commencement of ore processing;</li> <li>• then every three years thereafter until decommissioning of the mine and ore processing operations respectively, or as otherwise directed by the Director-General.</li> </ul> <p>The Applicant shall conduct an environmental audit of the mining and infrastructure areas of the development in accordance with ISO 14010 - Guidelines and General Principles for Environmental Auditing, and ISO 14011 - Procedures for Environmental Auditing (or the current versions), and in accordance with any specifications required by the Director-General. Copies of the report shall be submitted by the Applicant to the Director-General, BSC, DECCW, NoW, DI&amp;I (Minerals) and CEMCC within two weeks of the report's completion for comment.</p> <p>①The audit shall:</p> <ol style="list-style-type: none"> <li>assess compliance with the requirements of this consent, licences and approvals;</li> <li>in the event of any non-compliance, report on the effectiveness</li> </ol>	<ul style="list-style-type: none"> <li>• Independent Environmental Audit Report, May 2007</li> <li>• Independent Environmental Audit Report, May 2008</li> <li>• Independent Environmental Audit Report, May 2009</li> <li>• Independent Environmental Audit, Trevor Brown &amp; Associates, April 2010</li> <li>• Independent Environmental Audit, Trevor Brown &amp; Associates, April 2011</li> <li>• Letters to DP&amp;I, BSC, OEH, NoW, DI&amp;I (Minerals) re Independent Environmental Audit, 20 May 2011</li> <li>• Independent Environmental Audit, Trevor Brown &amp; Associates, April 2012</li> </ul>	<p>(a) An Independent Third Party Environmental Audit has been conducted to address the requirements if condition 8.8 and the reports submitted to DP&amp;I, BSC, DECCW/OEH, NoW, DI&amp;I (Minerals) and CEMCC within 2 weeks of finalisation of the report by the independent auditors and submission to CGM.</p> <p>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.</p> <p>An Independent Audit was conducted for the period April 2007 to April 2010, and 2011 to 2013, to satisfy MCoA 8.8(a).</p> <p>The Independent Environmental Audits of the CGP have continued to be conducted annually at the request of Barrick Australia.</p>	<b>Compliant</b>

**COWAL GOLD PROJECT - INDEPENDENT ENVIRONMENTAL AUDIT – APRIL 2012**

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<p>of the environmental management of the mine as it may relate to the area of non-compliance;</p> <p>c. be carried out at the Applicant's expense; and</p> <p>d. be conducted by a duly qualified independent person or team approved by the Director-General in consultation with BSC and CEMCC.</p> <p>(i) The Director-General may, after considering any submission made by the relevant government agencies, BSC and CEMCC on the report, notify the Applicant of any requirements with regard to any recommendations in the report. The Applicant shall comply with those reasonable requirements within such time as the Director-General may require.</p>			
	<p>(b) <u>Independent Monitoring Panel</u></p> <p>(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 Director-General. The annual payment shall be indexed according to the Consumer Price Index (CPI) 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 Director-General in consultation with relevant government agencies and the CEMCC. The Panel shall at least comprise two duly qualified independent environmental scientists and a representative of the Director-General.</p>	<ul style="list-style-type: none"> <li>Eighth Independent Monitoring Panel Report, Oct 2012</li> <li>Ninth Independent Monitoring Panel Report, Oct 2013 (received by Barrick 2 Jun 2014)</li> </ul>	<p>The Independent Monitoring Panel was established by Barrick with two independent environmental scientists nominated by the Director-General. The current members are:</p> <p>Dr Craig Miller CSIRO Sustainable Ecosystems</p> <p>Emeritus Prof. Clive Bell University of Queensland.</p> <p>Barrick deposits \$30,000 (plus CPI) annually into a special account (Independent Panel Monitoring Trust) for the functioning of the panel.</p> <p>The IMP prepares a report for the DoP/DP&amp;I annually:</p> <ul style="list-style-type: none"> <li>Eighth IMP Report was provided to Barrick on</li> <li>Ninth IMP Report was submitted to DoP and provided to CGM on 2 June 2014</li> </ul>	<b>Compliant</b>
	<p>(b) <u>Independent Monitoring Panel</u></p> <p>(ii) The panel shall:</p> <p>(a) provide an overview of the independent audits required by condition 8.8(a) above;</p> <p>(b) regularly review all environmental monitoring procedures undertaken by the Applicant, and monitoring results; and</p> <p>(c) 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 D-G. The first report shall be prepared one year after commencement of construction. The report shall be prepared annually thereafter unless otherwise directed by the D-G. Copies of the report shall be provided to those parties which receive the AEMR (condition 9.2) and shall be made publicly available at Bland Shire Council within two weeks of the report's completion</p>	<ul style="list-style-type: none"> <li>Eighth IMP Report, Oct 2012</li> <li>Letter to DP&amp;I re IMP Eighth Report, 7 Dec 2012</li> <li>Ninth IMP Report, Oct 2013 (received by Barrick 2 Jun 2014)</li> </ul>	<p>(b)(ii)(a) The Independent Monitoring Panel has commented on the Independent Environmental Audit in each of the annual reports;</p> <p>(b)(ii)(b) environmental monitoring procedures and monitoring results are commented on in the annual reports;</p> <p>(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.</p>	<b>Compliant</b>
<b>9</b>	<b>REPORTING</b>			
<b>9.1</b>	<b>Reports on Operations</b>			
	The Applicant shall report on mine operations in accordance with the	<ul style="list-style-type: none"> <li>MOP Jun 2007-Jun 2009, Jun</li> </ul>	A MOP for 2009-2010 was submitted to DPI(Minerals) on	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	mine operations plan (condition 2.1).	2007 <ul style="list-style-type: none"> <li>MOP Mar 2009-Dec 2010, Mar 2009</li> <li>Amended MOP 2009-2010, 18 Mar 2010</li> <li>Letter from DI&amp;I re Approval of Amended MOP, 23 Nov 2010</li> <li>MOP Jan 2011 to Sep 2012</li> <li>Letter from DTIRIS re Approval of the MOP, 30 March 2011.</li> <li>Letter to DTIRIS re Variation to the MOP, 5 Apr 2012</li> <li>MOP Apr 2014 to Apr 2016, Apr 2014</li> </ul>	31 March 2009 and approved. An amendment to this MOP was submitted to DI&I and approved on 19 Mar 2010. A new MOP for the period January 2011 to September 2012 was approved by the DTIRIS (Minerals) on 30 March 2011. 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) and the Northern Waste Rock Emplacement (storage volume elevation increase). The draft MOP for April 2014 to April 2016 was prepared for submission to the authorities in April 2014.	
<b>9.2</b>	<b><i>Environmental Reporting</i></b>			
	<u>Annual Environmental Management Report (AEMR)</u> @The Applicant shall, throughout the life of the mine and for a period of at least five years after the completion of ore processing operations, prepare and submit an Annual Environmental Management Report (AEMR) to the Director-General. The AEMR shall review the performance of the mine against the environmental management plans (refer condition 3.2), Mining Operations Plan (refer condition 2.1), the conditions of this consent, and other licences and approvals relating to the mine. To enable ready comparison with EIS predictions, diagrams and tables, the report shall include, but not be limited to, the following matters: <ol style="list-style-type: none"> <li>an annual compliance audit of the performance of the project against conditions of this consent and statutory approvals;</li> <li>a review of the effectiveness of the environmental management of the mine in terms of DECCW, NoW, DII(Minerals), DII(Fisheries), and BSC requirements;</li> <li>results of all environmental monitoring required under this consent or other approvals, which includes interpretation and discussion by a suitably qualified person;</li> <li>from results of fauna monitoring, records of any fauna deaths due to mine operations;</li> <li>a listing of any variations obtained to approvals applicable to the subject area during the previous year;</li> <li>the outcome of the water budget for the year and the quantity of water used from water storages and Bland Creek Palaeochannel bore-field;</li> </ol>	<ul style="list-style-type: none"> <li>2010 AEMR</li> <li>2011 AEMR</li> <li>2012 AEMR</li> <li>2013 AEMR (draft)</li> <li>Letters to DECCW/OEH, NoW, DTIRIS (mineral Resources), DPI(Fisheries), DSC, BSC and CEMCC re 2010 AEMR, 25 Aug 2011</li> <li>Letters to DECCW/OEH, NoW, DTIRIS (Mineral Resources), DPI(Fisheries), DSC, BSC and CEMCC re 2011 AEMR, 4 July 2012</li> <li>Letters to DECCW/OEH, NoW, DTIRIS (Mineral Resources), DPI(Fisheries), DSC, BSC and CEMCC re 2012 AEMR, 20 Aug 2013</li> </ul>	(i) The Annual Environmental Management Report (AEMR) has been prepared by CGM in accordance with the MCoA 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; (d) AEMR 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;	<b>Compliant</b>

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<p>g) rehabilitation report;</p> <p>h) environmental management targets and strategies for the next year.</p> <p>(ii) In preparing the AEMR, the Applicant shall:</p> <p>a) consult with the Director-General during preparation of each report for any additional requirements;</p> <p>b) comply with any requirements of the Director-General or other relevant government agency; and</p> <p>c) ensure that the first report is completed and submitted within twelve (12) months of this consent, or at a date determined by the Director-General in consultation with DII(Minerals).</p> <p>(iii) The Applicant shall ensure that copies of each AEMR are submitted at the same time to the Director-General, DECCW, NoW, DII(Minerals), DSC, DII(Fisheries), the BSC and CEMCC, and be available for public information at the BSC within 14 days of submission to these authorities.</p>		<p>(g) section 5 Rehabilitation</p> <p>(h) section 6 Activities Proposed for the Next AEMR Period.</p> <p>(ii) 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.</p> <p>(iii) 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.</p>	
10	<b>COMMUNITY CONSULTATION/OBLIGATIONS</b>			
	<b><i>Community Consultation (including Aboriginal community)</i></b>			
10.1	<b><i>(a) Complaints</i></b>			
	<p>The Environmental Officer (refer condition 3.1) shall be responsible:</p> <p>(i) for receiving complaints with respect to construction works and mine operations on a dedicated and publicly advertised telephone line, 24 hours per day 7 days per week, entering complaints or comments in an up to date log book, and ensuring that a response is provided to the complainant within 24 hours; and</p> <p>(ii) providing a report of complaints received every six months throughout the life of the project to the Director-General, BSC, DECCW, DII(Minerals), and CEMCC, or as otherwise agreed by the Director-General. A summary of this report shall be included in the AEMR (condition 9.2(a)).</p>	<ul style="list-style-type: none"> <li>Responsibility Information Management System (RIMS)</li> <li>Letter to DP&amp;I re Community Complaints Register for 30 Dec to 30 Jun 2011, 5 July 2011</li> <li>Letter to DP&amp;I and other Agencies re Community Complaints Register for: <ul style="list-style-type: none"> <li>3 Jan 2013 to 30 June 2013</li> <li>1 Jul 2013 to 31 Dec 2011,</li> <li>3 Jan 2012 to 30 April 2014 2012,</li> </ul> </li> </ul>	<p>(a) CGM/Barrick has a 24hour complaints line (02) 6975 3454. CGM uses the External Communications component of the Responsibility Information Management System (RIMS) to track public complaints.</p> <p>(b) Six monthly reports of complaints received by CGM are prepared and submitted to OEI/BSC/DI&amp;I/CEMCC and DP&amp;I.</p>	<p><b>Compliant</b></p> <p><b>Compliant</b></p>
11	<b>NOTIFICATION OF LANDOWNERS</b>			
11.1	At least 3 months prior to increasing the mobile equipment fleet as described in the EA, the Applicant shall notify the landowners of the lands listed in Table 6 in writing that they have the right to require the Applicant to acquire their land at any stage during the development.		<p>CGM acts on legal advice in relation to the E42 Modification - Environmental Assessment (2009), that they have not triggered the requirement for notification of landowners under MCoA 11.1 (or MCoA 6.4(f)).</p> <p><b>Recommendation</b></p> <p>Barrick should clarify with DP&amp;I the intent/requirement under MCoA 11.1 related to maximum fleet numbers and land acquisition request(s) by land owners identified in the condition of consent. This issue should be clarified prior to of the conditions of Modification to the Development</p>	<b>Noted</b>



No.	Minister's Condition of Approval	Verification	Comments	Compliance
			Consent (MOD 11).	
11.2	If the results of monitoring required in Schedule 2 identify that impacts generated by the development are greater than the relevant impact assessment criteria, except where a negotiated agreement has been entered into in relation to that impact, then the Applicant shall, within 2 weeks of obtaining the monitoring results, notify the Director-General, the affected landowners and tenants (including tenants of mine-owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the criteria in Schedule 2.		Consultation has occurred with landowners following complaints about noise and blasting. Monitoring results for noise and overpressure conducted by SLR for Barrick have demonstrated compliance with MCoA/EPL and ML conditional criteria, and results are made available to the landowners and reported on the Barrick website. No incidence of non-compliance has been identified by the monitoring programs at the properties / residences occupied by the complainant parties.	Noted
	<b>Independent Review</b>			
11.3	If a landowner of privately-owned land considers the development to be exceeding the impact assessment criteria in Schedule 2, then he/she may ask the Director-General in writing for an independent review of the impacts of the development on his/her land. If the Director-General is satisfied that an independent review is warranted, the Applicant shall within 2 months of the Director-General's decision: (a) consult with the landowner to determine his/her concerns; (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct monitoring on the land, to: • determine whether the development is complying with the relevant impact assessment criteria in Schedule 2; and • identify the source(s) and scale of any impact on the land, and the development's contribution to this impact; and (c) give the Director-General and landowner a copy of the independent review.		No requests for Independent Reviews have been made to Barrick in relation to exceedance of impact assessment criteria.	Not activated
11.4	If the independent review determines that the development is complying with the relevant impact assessment criteria in Schedule 2, then the Applicant may discontinue the independent review with the approval of the Director-General. If the independent review determines that the development is not complying with the relevant impact assessment criteria in Schedule 2, then the Applicant shall: (a) implement all reasonable and feasible measures, in consultation with the landowner, to ensure that the development complies with the relevant criteria, and conduct further monitoring to determine whether these measures ensure compliance; or (b) secure a written agreement with the landowner to allow exceedances of the relevant impact assessment			Not activated

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<p>criteria, to the satisfaction of the Director-General.</p> <p>If the further monitoring referred to under paragraph (a) above determines that the development is complying with the relevant impact assessment criteria, then the Applicant may discontinue the independent review with the approval of the Director-General.</p>			
	<b>Land Acquisition</b>			
11.5	<p>Within 3 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:</p> <p>(a) 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 the 'additional noise mitigation measures' in condition 6.4(f) of Schedule 2;</p> <p>(b) the reasonable costs associated with: relocating within the same local government area, or to any other local government area determined by the D-G; 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</p> <p>(c) reasonable compensation for any disturbance caused by the land acquisition process.</p> <p>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 Director-General for resolution.</p> <p>Upon receiving such a request, the Director-General shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to: consider submissions from both parties;</p>		No written requests for acquisition have been received by Barrick Cowal during the audit period.	Not activated

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	<p>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 (a)-(c) above;</p> <p>prepare a detailed report setting out the reasons for any determination; and</p> <p>provide a copy of the report to both parties.</p> <p>Within 14 days of receiving the independent valuer'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 valuer's determination.</p> <p>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 Director-General 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 Director-General shall determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above and the independent valuer's report. 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 D-G's determination.</p> <p>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 Director-General determines otherwise.</p>			
11.6	The Applicant shall pay all reasonable costs associated with the land acquisition process described in condition 11.5 above.			Noted
11.7	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.			Noted
12	<b>FURTHER APPROVALS AND AGREEMENTS</b>			
12.1	<b>Statutory Requirements</b>			
	The Applicant shall ensure that all statutory requirements including but not restricted to those set down by the Local Government Act 1993, Pollution Control Act 1970, Clean Air Act 1961, Clean Water Act 1970, Noise Control Act 1975, Protection of the Environment	<ul style="list-style-type: none"> <li>• Environment Protection Licence No. 11912 (EPA)</li> <li>• Mining Lease No. 5135 (DMR)</li> <li>• Section 87 Permits No. 1361,</li> </ul>	Barrick obtained approvals under the relevant statutory requirements for the construction and operation of the mine facilities at CGP including: Environment Protection Licence No. 11912 (EPA) Mining Lease No. 5135 (DMR)	Noted

No.	Minister's Condition of Approval	Verification	Comments	Compliance
	Administration Act 1991, Protection of the Environment Operations Act 1997, National Parks and Wildlife Act 1974, and all other relevant legislation, Regulations, Australian Standards, Codes, Guidelines and Notices, Conditions, Directions, Notices and Requirements issued pursuant to statutory powers by the BSC, DECCW, DII(Minerals), DSC, NoW, RTA, DII(Agriculture), DII(Fisheries), and RAC, are fully met.	1648 & 1681 (NPWS) <ul style="list-style-type: none"> <li>Section 90 Consents to Destroy No. 1467 &amp; 1680 (NPWS)</li> <li>Part 3A Permits No.703A01055 &amp; 703A010056 (DLWC)</li> <li>Bore Licence Certificates (DLWC)</li> <li>Enclosure Permit No. 353669 (DLWC)</li> </ul>	Section 87 Permits No. 1361, 1648 & 1681 (NPWS) Section 90 Consents to Destroy No. 1467 & 1680 (NPWS) Part 3A Permits No.703A01055 & 703A010056 (DLWC) Bore Licence Certificates (DLWC) Enclosure Permit No. 353669 (DLWC)	

**Notes:**

1. This approval does not relieve the Applicant of the obligation to obtain any other approval under the Local Government Act, 1993 as amended, the Regulations made thereunder including approval of building plans, or any other Act.
  2. Any acceptable levels relating to noise, dust deposition rates, air blast overpressure and vibration etc, contained in this consent are maximum levels. Other agencies, such as the DECCW for example, may grant approvals/licences for certain aspects of the development, which may include consideration of matters such as noise levels etc.
- These regulatory processes generally occur after development consent is granted. Some licences (such as Pollution Control Licences) are renewable annually. These approvals/licences may require emission levels that are more stringent than those contained in this consent. This may occur where an agency receives additional information indicating that the emission levels approved in the development consent, are not sufficiently stringent to protect social and/or natural environmental quality

## **Attachment B   Environment Protection Licence**



## Attachment B - Environment Protection Licence No. 11912

EPL No.	EPL Condition	Audit Evidence	Comments	Compliance
<b>A1</b>	<b>What the licence authorises and regulates</b>			
<b>A1.1</b>	Not applicable			
<b>A1.2</b>	<p>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.</p> <p><b>Scheduled Activity:</b>  Mineral processing  Concrete works  Crushing, grinding or separating  Extractive activities  Mining for minerals</p>		Scheduled activities undertaken at the Cowal Gold Mine are in accordance with the maximum scale specified in this condition.	<b>Compliant</b>
	<p><b>Fee Based Activity Scale</b>  Mineral processing &gt; 2000000 - T processed  Mining for minerals &gt; 5000000 - T obtained</p>		Cowal Gold Mine has not exceeded the scale of minerals mined or mineral processed between May 2013 and May 2014.	<b>Compliant</b>
<b>A1.3</b>	Not applicable.			
<b>A1.4</b>	The licensee may carry out scheduled development works necessary for the activity of mineral processing to be undertaken at the premises.			<b>Noted</b>
<b>A2</b>	<b>Premises to which this licence applies</b>			
<b>A2.1</b>	<p>Cowal Gold Project 38km North East of West Wyalong.  Lake Cowal Road, West Wyalong NSW 2671  Premises include the land defined by ML 1535.</p>			<b>Noted</b>
<b>A3</b>	<b>Other activities</b>			
<b>A3.1</b>	<p>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)</p>			<b>Noted</b>
<b>A4</b>	<b>Information supplied to the EPA</b>			
<b>A4.1</b>	<p>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</p>			<b>Noted</b>

EPL No.	EPL Condition			Audit Evidence	Comments	Compliance
	reference to: (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.					
A4.2	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.			<ul style="list-style-type: none"><li>Development Consent Cowal Project and Modifications to the Cowal Gold Project approved by the Department of Planning</li><li>Cowal Gold Project – EIS</li><li>Cowal Gold Project – SIS</li><li>Modifications 1-10 to Cowal Gold Project</li></ul>		Noted
Discharges to air and water and applications to land						
P1	Location of monitoring/discharge points and areas					
P1.1	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.			<ul style="list-style-type: none"><li>EQuis/MP-5 database CGP Environment Department</li><li>Quarterly Monitoring Reports to DECCW/OEH</li><li>2012 AEMR</li><li>2013 AEMR (draft)</li><li>Dust Management Plan</li></ul>	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.	Compliant
	Air					
	1	Dust Monitoring	Dust gauge located approximately 1km west of ML1535 boundary, labelled as "McLintock's Shed" in Figure 5 'Dust Monitoring Locations' of the addendum to the "Cowal Gold Project Dust Management Plan" dated August 2007.			
	2	Dust Monitoring	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 Dust Management Plan" dated August 2007.			
	3	Dust Monitoring	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 Project Dust Management Plan" dated August 2007.			
	4	Dust Monitoring	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 Project Dust Management Plan" dated August 2007.			
	5	Dust Monitoring	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 Dust Management Plan" August 2007.			
					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.	Compliant
					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.	

EPL No.	EPL Condition			Audit Evidence	Comments	Compliance								
	6	Dust Monitoring	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 the addendum to the "Cowal Gold Project Dust Management Plan" dated August 2007.											
P1.2	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.			<ul style="list-style-type: none"><li>Quarterly Monitoring Reports</li></ul>	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.	Compliant								
	Water and Land			<ul style="list-style-type: none"><li>Quarterly Monitoring Reports</li><li>CGP Site Rainfall Records</li><li>Surface Water Event Monitoring Field Sheets (for rainfall events of 20mm or greater).</li><li>Site Water Management Plan</li><li>Surface Water, Groundwater, Meteorological and Biological Monitoring Program</li><li>2012 AEMR</li><li>2013 AEMR (draft)</li></ul>	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: <table><tr><td>2 June 2013</td><td>26.6mm</td></tr><tr><td>12 June 2013</td><td>23.8mm</td></tr><tr><td>17 September 2013</td><td>54.4mm</td></tr><tr><td>1 March 2014</td><td>26.6mm</td></tr></table> <p>Groundwater monitoring has been conducted from piezometers listed in P1.2 as EPA Identification Points 19-40, in accordance with the EPL requirements.</p>	2 June 2013	26.6mm	12 June 2013	23.8mm	17 September 2013	54.4mm	1 March 2014	26.6mm	Compliant
2 June 2013	26.6mm													
12 June 2013	23.8mm													
17 September 2013	54.4mm													
1 March 2014	26.6mm													
12	Stormwater quality monitoring	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.												
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.												
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												

EPL No.	EPL Condition			Audit Evidence	Comments	Compliance
			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			

EPL No.	EPL Condition			Audit Evidence	Comments	Compliance
			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.			



EPL No.		EPL Condition		Audit Evidence	Comments	Compliance
	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
P2 Weather monitoring						
P2.1	The following points in the table are identified in this licence for the purposes of the monitoring of weather parameters at the point.			<ul style="list-style-type: none"><li>Blast Management Plan Figure 1</li><li>Cowal Calibration Report, Sentinel Pty Ltd, 21 Jul 2013</li><li>Monthly Weather Station Reports – January 2010 to March 2013, Sentinel Pty Ltd</li><li>Cowal Calibration Report, Sentinel Pty Ltd, 21 Sep 2013</li><li>Cowal Calibration Report, Sentinel Pty Ltd, 21 Dec 2013</li><li>Cowal Calibration Report, Sentinel Pty Ltd, 21 Mar 2014</li></ul>	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
	EPA No.	Type of Monitoring Point	Description of location			
	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.			
3 Limit conditions						
L1	Pollution of waters					
L1.1	Except as may be expressly provided in any other condition of this					Noted

EPL No.	EPL Condition				Audit Evidence	Comments	Compliance								
	licence, the licensee must comply with section 120 of the <i>Protection of the Environment Operations Act 1997</i> .														
L2	Load limits – Not applicable														
L3	Concentration limits														
L3.1	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.						Noted								
L3.2	Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.						Noted								
L3.3	To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s.						Noted								
	<div><b>Point 48</b><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<sub>WAD</sub></td><td>mg/l</td><td>20</td><td>30</td></tr></table></div>				Pollutant	Units of measure	90percentile concentration limit	100 percentile concentration limit	CN <sub>WAD</sub>	mg/l	20	30	<ul style="list-style-type: none"><li>Cyanide Management Plan 2010, (revision)</li><li>Cyanide Management Plan, revision , Dec 2010</li><li>Monthly Cyanide Monitoring Results, May 2013 to May 2014</li></ul>	Monitoring of the discharge to the tailings storage facilities is conducted twice daily. All results of the cyanide monitoring have been < 20mg CN <sub>WAD</sub> /L (90 percentile) and no CN <sub>WAD</sub> results have exceeded the 30mg CN <sub>WAD</sub> /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.	Compliant
Pollutant	Units of measure	90percentile concentration limit	100 percentile concentration limit												
CN <sub>WAD</sub>	mg/l	20	30												
Waste															
L5.1	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.					No waste material from any outside premises has been received onto the CGM site.	Compliant								
L5.2	For the purposes of condition L5.1: (a) Effluent, waste rock and tailings generated at the premises are not defined as “waste”.						Noted								

EPL No.	EPL Condition	Audit Evidence	Comments	Compliance
	(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 <i>Waste Classification Guidelines</i> (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 <i>Cowal Gold Project - Hazardous Waste and Chemical Management Plan</i> .	<ul style="list-style-type: none"> <li>Email to DECC/DPI-Minerals re Bioremediation Facility, 10 Dec 2008</li> <li><i>Waste Classification Guidelines</i> (DECC, 2008)</li> <li>EPL Variation 6 Apr 2009</li> <li>Waste Classification Report – Bioremediation Area, Barson, Mar 2012</li> </ul>	<p>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.</p> <p>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.</p> <p>A Waste Classification Report – Bioremediation Area CGM (Barson, dated March 2012) concluded that:</p> <p><i>"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".</i></p>	Compliant
	(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 <i>Waste Classification Guidelines</i> (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 <i>Cowal Gold Project - Hazardous Waste &amp; Chemical Management Plan</i> .	<ul style="list-style-type: none"> <li>Waste Classification Report – Bioremediation Area, Barson, Mar 2012</li> </ul>	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
	(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 <i>Waste Classification Guidelines</i> (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.	<ul style="list-style-type: none"> <li>Waste Classification Report – Bioremediation Area, Barson, Mar 2012</li> </ul>	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

EPL No.	EPL Condition	Audit Evidence	Comments	Compliance																								
L6	<b>Noise Limits</b>																											
	<p>Noise generated from the premises must not exceed criteria outlined in Table 1 at any residence on privately owned land, or on more than 25 per cent of privately owned land not located within Lake Cowal as shown on the plan Appendix 3 of the Cowal Gold Mine development consent DA14/98, as modified from time to time.</p> <table><tr><th>Location</th><th>Day/Evening/Night dB(A) LAeq(15 minute)</th></tr><tr><td>Bungabulla</td><td>39</td></tr><tr><td>Coniston</td><td>44</td></tr><tr><td>Cowal North</td><td>38</td></tr><tr><td>Gumbelah</td><td>39</td></tr><tr><td>Lake Cowal (non-Barrick)</td><td>38</td></tr><tr><td>Laurel Park</td><td>39</td></tr><tr><td>Mattiske</td><td>36</td></tr><tr><td>McLintock</td><td>41</td></tr><tr><td>The Glen</td><td>38</td></tr><tr><td>West Lea</td><td>41</td></tr><tr><td>All other residences</td><td>35</td></tr></table> <p>Where LAeq means the equivalent continuous noise level – the level of noise equivalent to the energy average of noise levels occurring over a measurement period.</p>	Location	Day/Evening/Night dB(A) LAeq(15 minute)	Bungabulla	39	Coniston	44	Cowal North	38	Gumbelah	39	Lake Cowal (non-Barrick)	38	Laurel Park	39	Mattiske	36	McLintock	41	The Glen	38	West Lea	41	All other residences	35	<ul style="list-style-type: none"><li>Noise Management Plan, November 2004</li><li>Operating Noise Monitoring, SLR, Jan 2012</li><li>Operating Noise Monitoring, SLR, Jul 2012</li><li>Operating Noise Monitoring, SLR, Jan 2013</li><li>Operating Noise Monitoring, SLR, Jul 2013</li><li>Operating Noise Monitoring, SLR, Jan 2014</li></ul>	<p>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.</p> <p>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</p>	Compliant
Location	Day/Evening/Night dB(A) LAeq(15 minute)																											
Bungabulla	39																											
Coniston	44																											
Cowal North	38																											
Gumbelah	39																											
Lake Cowal (non-Barrick)	38																											
Laurel Park	39																											
Mattiske	36																											
McLintock	41																											
The Glen	38																											
West Lea	41																											
All other residences	35																											
L6.2	Noise generated from the premises is to be measured in accordance with the relevant requirements and exemptions of the "NSW Industrial Noise Policy".		The noise monitoring procedures are consistent with and in accordance with the NSW Industrial Noise Policy.	Compliant																								
L6.3	<p>The noise criteria identified in condition L6.1 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.</p> <p>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.</p>	<ul style="list-style-type: none"><li>Operating Noise Monitoring, Heggies, Jul 2010</li><li>Operating Noise Monitoring, Heggies, Jan 2011</li><li>Operating Noise Monitoring, SLR, Jul 2011</li><li>Operating Noise Monitoring, SLR, Jan 2012</li><li>Operating Noise Monitoring, SLR, Jul 2012</li><li>Operating Noise Monitoring, SLR, Jan 2013</li></ul>	The 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. Weather conditions are noted during noise surveys and reported in the monitoring reports.	Compliant																								
L7	<b>Blasting Limits</b>																											

EPL No.	EPL Condition	Audit Evidence	Comments	Compliance
L7.1	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.	<ul style="list-style-type: none"> <li>Blast Management Plan, August 2003</li> <li>Review of Blast Monitoring Report 2010, The Saros Group, Feb 2011</li> <li>Review of Blast Monitoring Report 2011, The Saros Group, Mar 2012</li> <li>Review of Blast Monitoring Report 2012, The Saros Group, Mar 2013</li> <li>Review of Blast Monitoring Report 2012, The Saros Group, Apr 2014</li> </ul>	<p>Monitoring of blasts between January 2013 and March 2014 demonstrated compliance with the overpressure and vibration Day and Evening criteria.</p> <p>Five blast events exceeded the 95dBL criteria on Sundays and Public Holidays, during January 2013 to March 2014.</p> <p>No blasts occurred at night.</p>	Compliant
L7.2	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>			
L7.3	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.	<ul style="list-style-type: none"> <li>Blast Management Plan August 2003</li> <li>Review of Blast Monitoring Report 2010, The Saros Group, Feb 2011</li> <li>Review of Blast Monitoring</li> </ul>	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



EPL No.	EPL Condition	Audit Evidence	Comments	Compliance
L7.4	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 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.	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		Compliant
L8	<b>Potentially Offensive Odour</b>			
L8.1	No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the <i>Protection of the Environment Operations Act 1997</i> .		No odour complaints have been received in relation to the operation of the process plant.	Compliant
<b>Operating conditions</b>				
O1	<b>Activities must be carried out in a competent manner</b>			
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	<b>Maintenance of plant and equipment</b>			
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. 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.	Compliant

EPL No.	EPL Condition	Audit Evidence	Comments	Compliance
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 <i>Protection of the Environment Operations Act 1997</i> .	<ul style="list-style-type: none"> <li>Barrick Induction Training package</li> <li>Training Course Register for Barrick personnel</li> <li>Training Course Summary for Barrick CGM</li> <li>CGM Environmental Awareness Handbook</li> <li>CGM Oil and Chemical Spill Response Awareness Handbook</li> </ul>	<p>Training of Barrick personnel in the responsibilities and liabilities under the <i>Protection of the Environment Operations Act</i> is conducted annually.</p> <p>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.</p>	Compliant
<b>Bunding Requirements</b>				
O3.1	All above ground storage facilities containing flammable and combustible liquids must be banded in accordance with Australian Standard AS1940:2004.	<ul style="list-style-type: none"> <li>Chemical Storage Bund Audit, Extrin, Apr 2010</li> <li>Chemical Storage Bund Audit, Extrin, Apr 2011</li> <li>Chemical Storage Bund Audit, 2012</li> <li>Chemical Storage Bund Audit, Extrin, 29 Jul 2013</li> <li>Chemical Storage Bund Audit, Extrin, 30 May 2014</li> </ul>	<p>The aboveground diesel storage facilities are banded in accordance with AS1940 and the tank in the contractor's area is a double skinned tank constructed to AS1692 required to be placed on a concrete containment area with a sump (completed in May 2009) to reduce potential for spillage of fuel to the ground during filling and vehicle refuelling.</p> <p>Audits of the status of bunding on the CGM site and process plant area have been conducted annually by Extrin. The audits of the bunds have identified a number of minor maintenance issues (mainly associated with concrete cracking or minor failure of bund materials) that have been addressed by Barrick following each audit.</p>	Compliant
<b>Waste Rock Emplacements, Tailings Facilities and Water Storage Facilities</b>				
O4.1	The waste rock emplacement 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 1:200 (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.		<p>Any seepage from the northern and southern waste emplacement areas is directed to the internal water collection system.</p> <p>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.</p>	Compliant
O4.2	The tailings storage facilities and contained water storage facilities must have a basal barrier or impermeable liner with an equivalent permeability of $1 \times 10^{-9}$ metres per second over a thickness of 1 metre.	<ul style="list-style-type: none"> <li>Letter from Dam Safety Committee re STSF, Jun 2010</li> <li>Tailings Storage Facility Surveillance Report, URS,</li> </ul>	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.	Compliant

EPL No.	EPL Condition	Audit Evidence	Comments	Compliance								
		<div>Mar 2012</div> <ul style="list-style-type: none"><li>Tailings Storage Facility Surveillance Report, URS, Mar 2013</li><li>NTSF Surveillance Report, URS, Dec 2013</li><li>STSF Surveillance Report, URS, Mar 2014</li></ul>	<div>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 June 2010 advising that the review satisfies the Committee's requirements.</div> <div>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.</div>									
O5	Dust											
O5.1	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.		No dust complaints have been received between May 2013 and May 2014.	Noted								
5	Monitoring and recording conditions											
M1.1	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.	<ul style="list-style-type: none"><li>Environmental Management File 5.09 - Monitoring</li></ul>		Noted								
M1.2	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.	<ul style="list-style-type: none"><li>Environmental Management File 5.09 - Monitoring</li><li>EQulS / RIMS database</li></ul>	All monitoring data collected by CGP is entered into the Barrick EQulS 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.	Compliant								
M1.3	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.	<ul style="list-style-type: none"><li>EQulS / RIMS database</li></ul>	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.	Compliant								
M2	Requirement to monitor concentration of pollutants discharged											
M2.1	<div>For each monitoring/discharge point or utilisation area specified (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.</div> <div>POINTS 1,2,3,4,5</div> <table><thead><tr><th>Pollutant</th><th>Units</th><th>Frequency</th><th>Sampling Method</th></tr></thead><tbody><tr><td></td><td></td><td></td><td></td></tr></tbody></table>	Pollutant	Units	Frequency	Sampling Method					<ul style="list-style-type: none"><li>Sentinel Pty Ltd</li><li>Monthly Weather Reports, Apr 2013 to May 2014, Sentinel Pty Ltd</li></ul>	<div>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.</div> <div>Surface water monitoring occurred following EPL trigger (i.e. &gt;20mm rainfall/24hrs) for the</div>	Compliant
Pollutant	Units	Frequency	Sampling Method									

EPL No.	EPL Condition				Audit Evidence	Comments	Compliance
	Aluminium	mg/kg	Every 6 months	Representative sample		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  Monitoring data and results are reported in the AEMR and EPA Annual Return.	
	Arsenic						
	Cadmium						
	Copper						
	Lead						
	Particulates - deposited matter	g/m <sup>2</sup> /mth	Monthly	AM-19			
	Selenium	mg/kg					
	Zinc	mg/l	Every 6 months	Representative sample			
	POINT 6						
	Pollutant	Units	Frequency	Sampling Method			
	Aluminium	mg/kg	Every 6 months	Representative sample			
	Arsenic						
	Cadmium						
	Copper						
	Lead						
	Particulates - deposited matter	g/m <sup>2</sup> /mth	Monthly	AM-19			
	Selenium	mg/kg					
	Total suspended particles	µg/m <sup>3</sup>	Every 6 days	AM-18			
	Zinc	mg/l	Every 6 months	Representative sample			
	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 <sub>3</sub> )	mg/l	Quarterly	Representative sample			
	Antimony						
	Arsenic						
	Cadmium						
	Conductivity	µS/cm	Monthly	In situ			

EPL No.	EPL Condition				Audit Evidence	Comments	Compliance
	Copper	mg/l	Quarterly	Representative sample			
	Lead						
	Mercury						
	Selenium						
	Total suspended particles	mg/l	Quarterly	Representative sample			
	Zinc						
	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 <sub>3</sub> )	mg/l	Quarterly	Representative sample			
	Antimony						
	Arsenic						
	Cadmium						
	Calcium Chloride						
	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 20 <sup>th</sup> Ed APHA 4500-CN-1 method  Alternative method and analysis by 20th Ed. APHA 4500-CN-1 method E, D or F				
Lead	mg/l	Quarterly	Representative sample				
Magnesium							
Potassium							
Selenium							
Sodium							
Standing water level	metres	Monthly	In situ				
Sulfate	mg/l	Quarterly	Representative sample				
Total Hardness							
Total suspended particles							



EPL No.	EPL Condition				Audit Evidence	Comments	Compliance
	Zinc						
	pH	pH units	Monthly	In situ			
	POINTS 34,36,38,40, 41,42,43						
	Pollutant	Units	Frequency	Sampling Method			
	Alkalinity (as CaCO <sub>3</sub> ) 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 20 <sup>th</sup> Ed. APHA 4500-			

EPL No.	EPL Condition				Audit Evidence	Comments	Compliance
				CN-1 method Alternative method and analysis by 20th Ed. APHA 4500-CN-1 method E, D or F			
	For the purposes of the table(s) above <ul style="list-style-type: none"> <li>Special Frequency 1 means the collection of samples weekly and following rainfall events of 20mm or greater in a 24 hour period.</li> <li>At Monitoring Points 14, 15, 16, 17, and 18, monitoring is not required in the absence of any available surface water.</li> <li>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.</li> </ul>						
M2.4	For the purposes of the table(s) above <ul style="list-style-type: none"> <li>Special Frequency 1 means the collection of samples weekly and following events of 20mm or greater in any 4 hour period.</li> <li>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.</li> <li>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.</li> </ul>				<ul style="list-style-type: none"> <li>Weekly Cowal Mine surveyor m AHD level readings for Lake Cowal (whilst water is across ML1535 boundary fence).</li> <li>EPL Variation: 21 May 2014 Notice Number 1522063.</li> </ul>	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	<b>Testing methods - concentration limits</b>						
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: <p>(a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or</p> <p>(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</p> <p>(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.</p> <p><b>Note:</b> The Protection of the Environment Operations (Clean Air) Regulation 2002 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".</p>				<ul style="list-style-type: none"> <li>Approved Methods for the Sampling and Analysis of Air Pollutants in NSW</li> <li>Interpretation and Discussion of 2012 Air Quality Monitoring Results, Prof Stephen Cattle, University of Sydney, 12 Apr 2013</li> <li>Interpretation and Discussion of 2013 Air Quality Monitoring Results, Prof Stephen Cattle, Uni of Sydney, 31 May 2014</li> </ul>	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

EPL No.	EPL Condition	Audit Evidence	Comments	Compliance
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
<b>M4</b>	<b>Recording of pollution complaints</b>			
M4.1	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.	<ul style="list-style-type: none"> <li>Responsibility Information Management System (RIMS)</li> </ul>	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.	Compliant
M4.2	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.	<ul style="list-style-type: none"> <li>Letters to DoP/DP&amp;I, DPI/DII, DECC/OEH, BSC and CEMCC re Complaints Register: <ul style="list-style-type: none"> <li>Jan to Jul 2013</li> <li>Jul to Dec 2013</li> </ul> </li> </ul>	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 is submitted to the relevant authorities each 6 months and a full summary included in the AEMR each year.	Compliant
M4.3	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
M4.4	The record must be produced to any authorised officer of the EPA who asks to see them.			Noted
<b>Telephone complaints line</b>				
M5.1	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.	<ul style="list-style-type: none"> <li>Responsibility Information Management System (RIMS)</li> <li>Letters to DECC/OEH re Complaints Register: <ul style="list-style-type: none"> <li>Jan and Jul 2013</li> <li>Jan to May 2014</li> </ul> </li> </ul>	(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
M5.2	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

EPL No.	EPL Condition	Audit Evidence	Comments	Compliance																															
M5.3	Conditions M5.1 and M5.2 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.	<ul style="list-style-type: none"><li>Blast Management Plan August 2003</li><li>Review of Blast Monitoring Report 2012, The Saros Group, Mar 2013</li><li>Review of Blast Monitoring Report 2013, The Saros Group, Mar 2014</li></ul>	(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: <ul style="list-style-type: none"><li>BM01 - Gumbelah residence and BM03 - Coniston Residence are categorised as 'residence on privately owned land'.</li><li>BM02, BM04.1, BM05, BM06 and BM09 are positioned to assess the impacts on and around Lake Cowal.</li><li>BM07 – Administration and BM10 Near Field Monitor in the Blast Management Plan.</li></ul> (b) Blast monitoring equipment undergoes maintenance and annual calibration in February/March by the Saros Group.	Compliant																															
M8	Requirement to monitor weather																																		
M8.1	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. <b>Point 7</b> <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="4">AM-4</td></tr><tr><td>Temperature @ 2m</td><td></td><td rowspan="5">15min</td></tr><tr><td>Temperature @ 10m</td><td></td></tr><tr><td>Wind speed @ 10m</td><td>m/s</td></tr><tr><td>Wind direction @ 10m</td><td>o</td></tr><tr><td>Sigma theta @ 10m</td><td>o</td></tr><tr><td>Solar radiation</td><td>W/m<sup>2</sup></td><td></td><td>AM-4</td></tr><tr><td>Siting</td><td></td><td></td><td>AM-1 &amp; AM-4</td></tr><tr><td>Measurement</td><td></td><td></td><td>AM-2 &amp; AM-4</td></tr></table>	Parameter	Units	Continuous Averaging Period	Method	Rainfall	mm	24hr	AM-4	Temperature @ 2m		15min	Temperature @ 10m		Wind speed @ 10m	m/s	Wind direction @ 10m	o	Sigma theta @ 10m	o	Solar radiation	W/m <sup>2</sup>		AM-4	Siting			AM-1 & AM-4	Measurement			AM-2 & AM-4	<ul style="list-style-type: none"><li>Download/Calibration of the Automatic Weather Station, Sentinel April 2010 to Jan 2012</li><li>Cowal Calibration Report, Sentinel Pty Ltd, 21 Jul 2013</li><li>Cowal Calibration Report, Sentinel Pty Ltd, Sep 2013</li><li>Cowal Calibration Report, Sentinel Pty Ltd, Dec 2013</li><li>Cowal Calibration Report, Sentinel Pty Ltd, Mar 2014</li></ul>	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 M8.1. Data is downloaded and reported monthly to CGM by Sentinel.  Calibration of the meteorological station equipment occurs quarterly by Sentinel Pty Ltd.	Compliant
Parameter	Units	Continuous Averaging Period	Method																																
Rainfall	mm	24hr	AM-4																																
Temperature @ 2m		15min																																	
Temperature @ 10m																																			
Wind speed @ 10m	m/s																																		
Wind direction @ 10m	o																																		
Sigma theta @ 10m	o																																		
Solar radiation	W/m <sup>2</sup>		AM-4																																
Siting			AM-1 & AM-4																																
Measurement			AM-2 & AM-4																																

EPL No.	EPL Condition	Audit Evidence	Comments	Compliance
	Reporting Conditions			
R1	Annual return documents			
R1.1	<b>What documents must an Annual Return contain?</b> 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.	<ul style="list-style-type: none"><li>Annual Return to EPA 23 Dec 2011to 22 Dec 2012, submitted 20 Feb 2013</li><li>Annual Return to EPA 23 Dec 2011to 22 Dec 2012, submitted 17 Feb 2014</li></ul>	(a) The Annual Returns have been prepared by CGM on the approved EPA forms by CGM and submitted to the EPA /OEI 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	<b>Period covered by Annual Return</b> 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.	<ul style="list-style-type: none"><li>Annual Return to EPA 23 Dec 2011to 22 Dec 2013, submitted 17 Feb 2014</li></ul>	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 2011 was submitted to the EPA on 17 February 2014 complete with the monitoring and complaints summary, in accordance with EPL condition R1.2.	Compliant
R1.5	<b>Deadline for Annual Return</b> 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/ OEI in accordance with the requirement of EPL condition R1.5 for 2010 to 2012.	Compliant
R1.7	<b>Licensee must retain copy of Annual Return</b> 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/OEI file.	Compliant
R1.8	<b>Certifying of Statement of Compliance and Signing of Monitoring and Complaints Summary</b> 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
Notification of environmental harm				
R2.1	Note: The licensee or its employees must notify the EPA of		No notifiable incidents were reported by CGM	Noted



EPL No.	EPL Condition	Audit Evidence	Comments	Compliance
	<i>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.</i>		to have occurred between May 2013 and May 2014.	
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.	<ul style="list-style-type: none"> <li>Letter from EPA re New Requirements for All Licensees, 16 Jan 2012</li> <li>Pollution Incident Response Management Plan (PIRMP) submitted to the EPA in Sep 2012</li> <li>PIRMP placed on website Feb 2014</li> </ul>	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.	<b>Noted</b>
<b>Written report</b>				
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	<b>Noted</b>
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	<b>Noted</b>
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 witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;		Not triggered	<b>Noted</b>

EPL No.	EPL Condition	Audit Evidence	Comments	Compliance
	(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
<b>Reporting of blasting monitoring</b>				
R4.1	The results of the blast monitoring required by condition M7.1 must be submitted to the EPA at the end of each reporting period.	<ul style="list-style-type: none"> <li>Review of Blast Monitoring Report 2010, The Saros Group, Feb 2011</li> <li>Review of Blast Monitoring Report 2011, The Saros Group, Mar 2012</li> <li>Review of Blast Monitoring Report 2012, The Saros Group, Mar 2013</li> <li>Review of Blast Monitoring Report 2012, The Saros Group, Apr 2014</li> </ul>	Blast monitoring results for CGM are recorded and summarised in an annual report prepared by The Saros Group for submission to the relevant authorities.	Compliant
R4.2	The licensee must report any exceedence of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedence becomes known to the licensee or to one of the licensee's employees or agents.		<p>Blasts monitoring results have not exceeded the Daytime and Evening overpressure or vibration criteria between May 2013 and May 2014..</p> <p>Five (5) blast related events exceeded the 95 dB(L) level for Sundays and Public Holidays, but this was less than 5% of the total number of blast between May 2013 and May 2014.</p>	Compliant
<b>General conditions</b>				
<b>Copy of licence kept at the premises</b>				
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 CONDITIONS

## ATTACHMENT C MINING LEASE CONDITIONS

No.	ML 1535 Condition	Audit Evidence	Comments	Compliance
1	<b>Notice to Landholders</b>			
	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	<b>Reports</b>			
	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	<b>Safety</b>			
	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	<b>Rehabilitation</b>			
	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.....	<ul style="list-style-type: none"> <li>MOP Jan 2011 to Sep 2012</li> <li>Letter from DTIRIS re MOP Oct 2012 to Jan 2014, 19 Dec 2012</li> <li>MOP Oct 2012 to Jan 2014</li> <li>Letter to DT&amp;I- DRE re Extension of MOP to 31 Jan 2015, 27 Sep 2013</li> <li>Letter from DT&amp;I-DRE re Approval of MOP Extension, 4 Oct 2013</li> <li>MOP (revised) 31 January 2014 to 31 January 2015</li> <li>MOP (draft) Apr 2014 to Apr 2016, dated Apr 2014</li> </ul>	<p>The proposed rehabilitation activities during each MOP term are described in section 4 of the MOP's.</p> <p>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&amp;I to include rehabilitation of:</p> <ul style="list-style-type: none"> <li>Fourth lifts to the NTSF and STSF;</li> <li>Eastern and southern outer batters slopes and Shaping and rehabilitation of northern section of the Southern Waste Rock Emplacement;</li> <li>Remaining areas along the upper outer slopes of the Perimeter Waste Rock Emplacement;</li> <li>Preparation and implementation of rehabilitation trial areas on the outer northern slopes of the Northern Waste Rock Emplacement.</li> </ul>	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	<b>Prevention of Soil Erosion and Pollution</b>			
	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 accordance with the Mining Operations Plan.....	<ul style="list-style-type: none"> <li>Erosion and Sediment Control Management Plan, revised Dec 2009</li> <li>Dust Management Plan, revised Feb 2009</li> </ul>	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
15	<b>Transmission lines, Communication lines and Pipelines</b>			
	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	<b>Fences and gates</b>			
	(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	<b>Roads and Tracks</b>			
	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	<b>Trees and Timber</b>			
	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.....	<ul style="list-style-type: none"> <li>Vegetation Clearance Protocol Nov 2008</li> <li>Letter from DoP re Inland Greybox Woodland, 10 Aug 2007</li> <li>Letter from DECC re Inland Greybox Woodland, 27 Aug 2007</li> <li>Letter from DECC re Myall Woodland, 29 Aug 2007</li> </ul>	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	<b>Mine Safety Plan</b>			
	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.	<ul style="list-style-type: none"> <li>CGM Mine Safety Plan, Jun 2009</li> </ul>	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)	<ul style="list-style-type: none"> <li>Letter from D&amp;I re MOP Jan 2011 - Sep 2012, 30 Mar 2011</li> <li>MOP Jan 2011-Sep 2012</li> <li>Letter to DTIRIS re Variation to MOP, 5 Apr 2012</li> <li>Letter from DTI-DRE re Approval of Variation to MOP, 14 May 2012</li> </ul>	An annual meeting is held of the Mining, Rehabilitation and Environmental Management Process Committee (MREMP) to discuss the Annual Environmental Management Report (AEMR). 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.	Compliant



No.	ML 1535 Condition	Audit Evidence	Comments	Compliance
	(1) Mining operations, including mining purposes, must be conducted in accordance with the MOP satisfactory to the Director-General.....	<ul style="list-style-type: none"> <li>MOP Oct 2012-Jan 2014</li> <li>Letter from DTI-DRE re Approval of MOP for Oct 2012 to Jan 2014, 19 Dec 2012</li> <li>Letter to DT&amp;I- DRE re Extension of MOP to 31 Jan 2015, 27 Sep 2013</li> <li>Letter from DT&amp;I-DRE re Approval of MOP Extension, 4 Oct 2013</li> <li>MOP (revised) 31 January 2014 to 31 January 2015</li> <li>MOP (draft) Apr 2014 to 2016, dated Apr 2014</li> </ul>	<p>An extension of the 2009-2010 MOP until 31 March 2011 was granted by DI&amp;I on 23 November 2010. A MOP for January 2011 to September 2012 was submitted to DI&amp;I and accepted on 30 March 2011.</p> <p>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.</p> <p>The October 2012 to January 2014 MOP was and approved by the DTIRIS-DRE on 19 December 2012.</p> <p>Barrick requested an extension to the MOP to 31 January 2015 to align with the resubmission of the Modification before DP&amp;I.</p> <p>A draft MOP for April 2014 to April 2016 has been prepared by Barrick for submission to DRE.</p>	Compliant
	(2) An Initial Mining Operations Plan must be submitted prior to commencement of construction on the site .....	<ul style="list-style-type: none"> <li>Initial Mining Operations Plan Cowal Gold Project Mar 2004</li> </ul>	The Initial Mining Operations Plan was submitted to DMR prior to commencement of construction of the mine on the CGP site.	Compliant
26	<b>Annual Environmental Management Report (AEMR)</b>			
	(1) Within 12 of the commencement of mining operations and thereafter annually ..... the lease holder must lodge an AEMR with the Director-General.	<ul style="list-style-type: none"> <li>2009 AEMR, April 2010</li> <li>2010 AEMR, April 2011</li> <li>2011 AEMR, April 2012</li> <li>2012 AEMR April 2013</li> <li>2013 AEMR (draft)</li> </ul>	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	<b>Blasting</b>			
	(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.	<ul style="list-style-type: none"> <li>Blast Management Plan 2009</li> <li>Review of Blast Monitoring Report 2013, The Saros Group, Mar 2014</li> <li>Blast Monthly Monitoring Reports, January, February and March 2014</li> </ul>	<p>Blast overpressure and vibration monitoring has demonstrated compliance of all blasts with the Day and Evening criteria specified in the MCoA/EPL/ML conditions.</p> <p>Exceedence of the 95dB(L) criteria (MCoA 6.3(a)) occurred from five (5) blasts on Sundays and public Holidays between January 2013 and March 2014. The 5 blast results greater than 95dB (Lin peak) overpressure criteria between May 2013 and May 2014, was less than 5% of the total blasts.</p>	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	<b>Use of Cyanide</b> 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.	<ul style="list-style-type: none"> <li>Letter from DPI re Approval of Cyanide Use on Mining Lease 1535, Cowal Gold Mine, 17 Jan 2006</li> </ul>	Letter of approval received from DPI in January 2006 for use of cyanide in the CGP process plant.	Compliant
29	<b>Control of Operations</b> (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