Evolution MINING

ATTACHMENT 2

Aquifer Interference Policy Considerations and Water Licensing

COWAL GOLD OPERATIONS
MINE LIFE MODIFICATION

Environmental Assessment
2016

Resource Strategies

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

A2 AQUIFER INTERFERENCE POLICY CONSIDERATIONS AND WATER LICENSING

This attachment provides further discussion on the requirements and application of relevant water licensing and associated approvals under the New South Wales (NSW) *Water Management Act, 2000* and the NSW *Water Act, 1912*. It also provides a discussion of relevant requirements of the *NSW Aquifer Interference Policy* (the AIP) (NSW Government, 2012).

Reference to Sections 1 to 8 in this attachment are references to the sections of the Main Report of the Environmental Assessment (EA). Internal references within this attachment are prefixed with "A2".

A2.1 AQUIFER INTERFERENCE POLICY CONSIDERATIONS

A2.1.1 Policy Overview

The AIP (NSW Government, 2012) has been developed by the NSW Government as a component of the NSW Government's *Strategic Regional Land Use Policy*. The AIP applies state wide and details water licence and impact assessment requirements.

The AIP has been developed to ensure equitable water sharing between various water users and proper licensing of water taken by aquifer interference activities such that the take is accounted for in the water budget and water sharing arrangements.

The *Water Management Act, 2000* defines an aquifer interference activity as that which involves any of the following (NSW Government, 2012):

- *the penetration of an aquifer,*
- *the interference with water in an aquifer,*
- *the obstruction of the flow of water in an aquifer,*
- *the taking of water from an aquifer in the course of carrying out mining or any other activity prescribed by the regulations, and*
- *the disposal of water taken from an aquifer in the course of carrying out mining or any other activity prescribed by the regulations.*

Examples of aquifer interference activities include mining, coal seam gas extraction, injection of water, as well as commercial, industrial, agricultural and residential activities that intercept the watertable or interfere with aquifers (NSW Government, 2012).

The AIP applies to all aquifer interference activities but has been developed in particular to address the following high risk activities (NSW Government, 2012):

- ***mining activities*** *such as open cut voids, underground mine workings and the disposal of water taken from an aquifer including water taken as part of coal seam gas extraction;*
- *other* ***extractive industries****, such as sand and gravel extraction...;*
- ***coal seam gas activities****, including those related to both exploration and production*
- *other large projects which require* ***dewatering*** *such as for the construction and maintenance of associated works, such as buildings, roads and other civil works;*
- ***injection works*** *used to transmit water into an aquifer; and'*
- *activities with the potential to contaminate groundwater or result in unacceptable loss of storage or structural damage to an aquifer.*

Licensing Requirements

The AIP requires all water taken by aquifer interference activities to be accounted for within the extraction limits set by the relevant Water Sharing Plan. A water licence is required, whether water is taken either incidentally or for consumptive use, where any act by a person carrying out an aquifer interference activity causes (NSW Government, 2012):

- *the removal of water from a water source; or*
- *the movement of water from one part of an aquifer to another part of an aquifer; or*
- *the movement of water from one water source to another water source, such as:*
  - *from an aquifer to an adjacent aquifer; or*
  - *from an aquifer to a river/lake; or*
  - *from a river/lake to an aquifer.*

The AIP also requires consideration of the continued take of water from groundwater or connected surface waters following cessation of an aquifer interference activity. For example, the post-closure inflow that occurs until a groundwater system reaches equilibrium following cessation of open cut mining is required to be considered.

Licences are required to be held to adequately account for the ongoing take of water until the system returns to equilibrium, or alternatively, sufficient licences are required to be surrendered to the Minister administering the *Water Management Act, 2000*.

Minimal Impact Considerations

In addition to licensing requirements, the *Water Management Act, 2000* includes the concept of ensuring *"*no more than minimal harm*"*. In this regard, the AIP includes minimal impact considerations relating to watertable and groundwater pressure drawdown and changes in groundwater and surface water quality.

The AIP provides that (NSW Government, 2012):

> *Aquifer interference approvals are not to be granted unless the Minister is satisfied that adequate arrangements are in force to ensure that no more than minimal harm will be done to any water source, or its dependent ecosystems, as a consequence of its being interfered with in the course of the activities to which the approval relates.*
>
> *While aquifer interference approvals are not required to be granted, the minimal harm test under the Water Management Act 2000 is not activated for the assessment of impacts. Therefore, this Policy establishes and objectively defines minimal impact considerations as they relate to water-dependent assets and these considerations will be used as the basis for providing advice to either the gateway process, the Planning Assessment Commission or the Minister for Planning.*

The AIP establishes minimal impact considerations for groundwater categories of both "highly productive" and "less productive" groundwater. Highly productive groundwater is defined by the AIP as groundwater which (NSW Government, 2012):

> *...is defined in this Policy as a groundwater source that is declared in the Regulations and will be based on the following criteria:*
>
> *a) has total dissolved solids of less than 1,500 mg/L, and*
>
> *b) contains water supply works that can yield water at a rate greater than 5 L/sec.*

The AIP further groups highly productive groundwater into the following categories:

- Alluvial.
- Coastal sands.
- Porous rock, including:
  - Great Artesian Basin – Eastern Recharge and Southern Recharge;
  - Great Artesian Basin – Surat, Warrego and Central; and
  - other porous rock.
- Fractured rock.

The AIP similarly defines categories for less productive groundwater which includes the following:

- Alluvial.
- Porous rock.
- Fractured rock.

However, aquifer interference approval consideration is not required for bores for the primary purpose of extracting and using of groundwater (Appendix A).

A2.1.2 Aquifer Interference Policy Requirements

An assessment of the CGO Mine Life Modification (the Modification) against the licensing requirements and minimal impact considerations of the AIP is provided in the sub-sections below.

Water Licensing Requirements

As discussed in Section A2.1.1, the AIP requires all water taken by aquifer interference activities to be accounted for within the extraction limits set by the relevant Water Sharing Plan. The Water Sharing Plans relevant to the Cowal Gold Operations (CGO) are the *Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012* and the *Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011*. The *Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011* was amended on 1 July 2016 however these changes to the water sharing plan do not affect the pre-existing licensing arrangements at the CGO.

Therefore, licensing under the *Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012* and the *Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011* is required to account for any additional loss of flow to the alluvium and fractured rock resulting from the Modification.

The predicted annual groundwater licensing volumes required for the Modification are summarised in Table A2-1.

Comparison of Evolution Mining (Cowal) Pty Limited's (Evolution) licence entitlements against the predicted annual licensing requirements (Table A2-1) shows that adequate licences are available to account for the potential take of water associated with the approved operations and the Modification within the alluvial and fractured rock aquifers.

Coffey Services Australia Pty Ltd (Coffey) (2016) has undertaken numerical modelling of the post-mining recovery of groundwater levels (Appendix A). Post-closure annual licensing requirements for the Modification are expected to be less than the licensing requirements during operation. It is expected that Evolution would have adequate licences to account for the potential post-closure take of water from the alluvial and fractured rock aquifers.

Reliable Surface Water

It is noted that the definition of a reliable water supply is provided in the current *Strategic Regional Land Use Policy for the New England North West Strategic Land Use Plan* and the *Strategic Regional Land Use Policy for the Upper Hunter Strategic Land Use Plan*.

Although no Strategic Regional Land Use Plan is currently in effect for the area associated with the CGO, it is expected that any future plan implemented would be consistent with the existing plans. The definition of a reliable water supply is as follows (NSW Office of Water [NOW], 2012):

> *reliable water of suitable quality, characterised by having rainfall of 350mm or more per annum (9 out of 10 years); or properties within 150m of a regulated river, or unregulated rivers where there are flows for at least 95% of the time (ie the 95th percentile flow of each month of the year is greater than zero) or 5th order and higher rivers; or groundwater aquifers (excluding miscellaneous alluvial aquifers, also known as small storage aquifers) which have a yield rate greater than 5L/s and total dissolved solids of less than 1,500mg/L.*

The AIP only refers to a *'surface water source that is defined as a reliable water supply'.* Therefore, the rainfall criteria and the groundwater aquifer criteria for a reliable water supply do not apply.

There are no regulated rivers, unregulated rivers with flow for at least 95 percent (%) of the time or 5th order rivers within 150 metres (m) of the CGO. Accordingly, there are no reliable surface water supplies relevant to the CGO, including Lake Cowal, which is ephemeral.

Minimal Impact Considerations

As discussed above, the AIP established minimal impact considerations for highly productive and less productive groundwater.

Table A2-1
Groundwater Licensing Requirement Summary

Water Sharing Plan/Relevant Legislation	Management Zone/ Groundwater Source	Relevant Licence	Existing Licensed Volume[1,2] (ML/annum)	Predicted Maximum Annual Licensing Requirements (ML/annum)[1,3]
Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012	Upper Lachlan Alluvial Zone 7 Management Zone	Pit dewatering (including pit inflows) and saline bores in ML 1535 (WAL 36615)	366	280
		Bland Creek Palaeochannel Borefield (WAL 31864)	3,650	3,650
		Eastern Saline Borefield (WAL 36569)	750[4] (per bore)	548
Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011	Lachlan Fold Belt Murray Darling Basin Groundwater Source	Pit dewatering (WAL 36617)	3,294	228

WAL = Water Access Licence; ML/annum = Megalitres per annum; ML 1535 = Mining Lease 1535.

1 Assuming 1 ML per unit share.

2 Source: Evolution (2015).

3 Source: Appendices A and B.

4 Eastern saline borefield licenses have zero ML licence allocation with temporary transfer of up to 750 ML/annum per bore.

Figure A2-1 presents the mapping of highly productive groundwater in the vicinity of the Modification, and indicates that an area of highly productive alluvial aquifer exists in the north-east of ML 1535. However, as outlined below, the groundwater quality within ML 1535 does not reflect a highly productive aquifer as it has total dissolved solids greater than 1,500 milligrams per litre (mg/L) (Appendix A).

Alluvial Aquifers

As detailed in the Hydrogeological Assessment (Appendix A), groundwater quality within ML 1535 generally has an electrical conductivity between 30,000 microSiemens per centimetre (µS/cm) and 55,000 µS/cm for both the alluvial and fractured rock aquifers. This equates to a total dissolved solids concentration of between 19,200 mg/L and 35,200 mg/L. Therefore, the groundwater source at the CGO would be considered to be less productive.

The Bland Creek Palaeochannel would represent a highly productive alluvial aquifer. The Cowal Gold Mine (CGM) Extension Modification (Barrick [Cowal] Limited, 2013) provided an assessment of the minimal impact considerations for the highly productive alluvial aquifer. The Modification would not change the approved extraction limits at the Bland Creek Palaeochannel Borefield or Eastern Saline Borefield or water supply works relative to the CGM Extension Modification.

However, since the Bland Creek Palaeochannel Borefield and Eastern Saline Borefield are for the primary purpose of extracting and using of groundwater, no aquifer interference approval consideration for the Modification is required (Appendix A).

Fractured Rock Aquifers

Mapping of highly productive groundwater in the vicinity of the Modification indicated that no areas of highly productive fractured rock aquifers exist in proximity to the CGO. As such, the impacts of the Modification to fractured rock have been assessed against the criteria for less productive groundwater.

Tables A2-2 and A2-3 provide an assessment of the watertable, water pressure and water quality minimal impact considerations for the less productive groundwater sources associated with the CGO.

A2.1.3 Summary of Potential Impacts of the Modification and Relevant Mitigation and Contingency Measures

A summary of the potential impacts of the Modification on groundwater resources, and the relevant mitigation and contingency measures are discussed below.

Potential Impacts

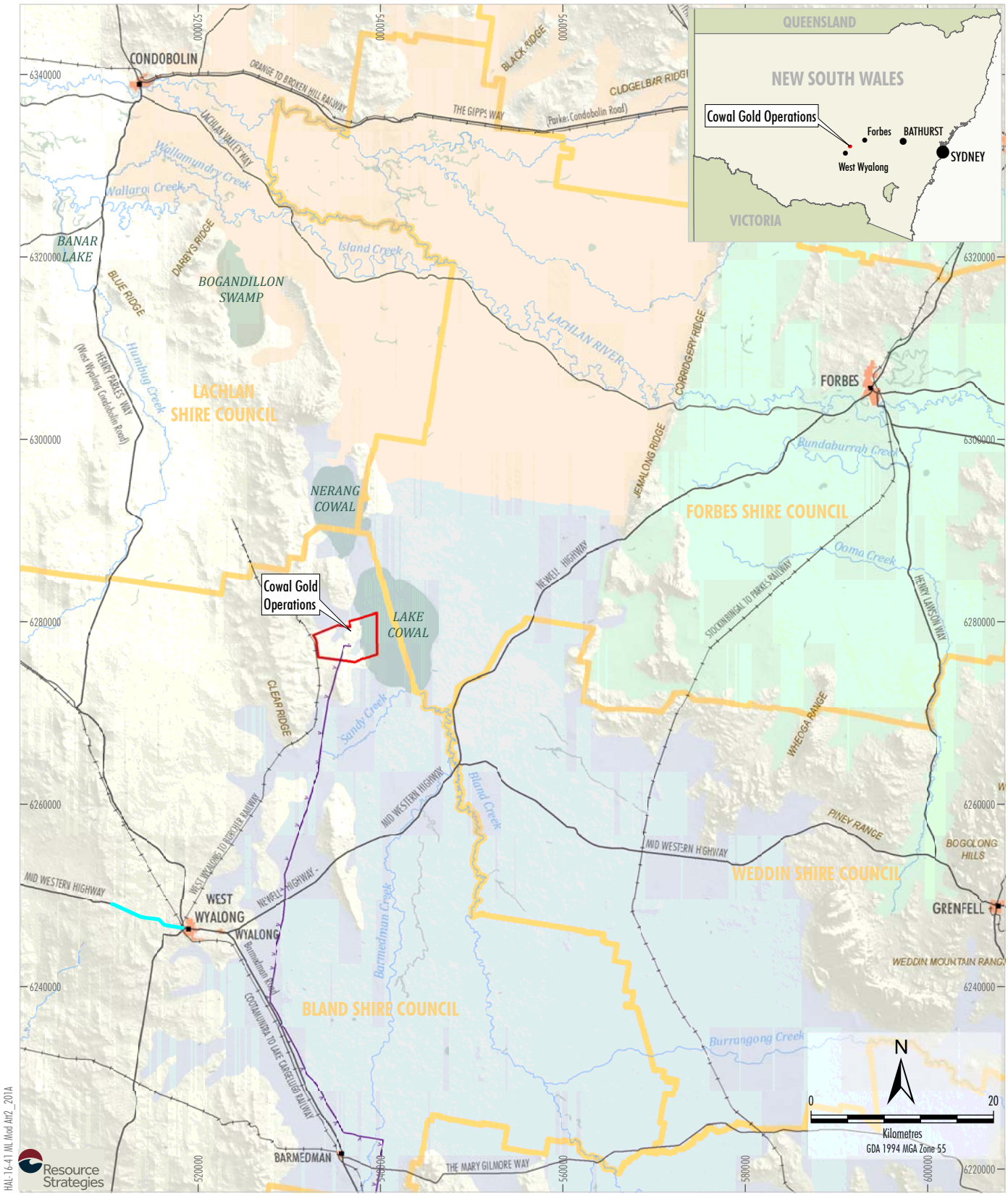
The potential impacts of the Modification during operation and post closure have been considered in the Hydrogeological Assessment (Appendix A).

The Modification would not change currently approved daily or annual rates of licensed extraction of groundwater or existing groundwater contingency measures. In addition, no material change to pit inflows is predicted (Appendix A).

Groundwater drawdown due to open pit mining and extraction from the saline groundwater supply bores within ML 1535 would generally remain within ML 1535. The equivalent average annual groundwater take from 2016 to the end of mine life is predicted to be approximately 200 ML/annum (i.e. between approximately 500 cubic metres per day [m^3/day] and 700 m^3/day) (Appendix A).

Coffey (2016) has concluded that groundwater quality would not change significantly during the operation of the Modification or post-closure, with the open pit continuing to act as a localised groundwater sink.

As the existing Groundwater Contingency Strategy, developed in consultation with the NOW (now the NSW Department of Primary Industries [DPI] Water) and other groundwater users, would be maintained for the Modification, and given there would be no change to currently approved daily or annual extraction limits from the Bland Creek Palaeochannel Borefield, no additional impacts to other users of the Bland Creek Palaeochannel are predicted (Appendix A).



LEGEND

- Mining Lease Boundary (ML 1535)
- Local Government Area Boundary
- Electricity Transmission Line
- Railway

Highly Productive Groundwater

- Upper Lachlan Alluvial Zone 3
- Upper Lachlan Alluvial Zone 5
- Upper Lachlan Alluvial Zone 7

Source: Geoscience Australia (2006); NSW Department of Industry (2016); NSW DPI Water (2013)

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Highly Productive Groundwater Mapping

Figure A2-1

Table A2-2
Minimal Impact Considerations for Less Productive Alluvial Water Sources

Aquifer	Alluvial Aquifer (Cowra Formation)
Category	Less Productive Water Source

Level 1 Minimal Impact Consideration	**Assessment**
<u>Watertable</u> 1. Less than or equal to a 10% cumulative variation in the watertable, allowing for typical climatic "post-water sharing plan" variations, 40 m from any: (a) high priority groundwater dependent ecosystem; or (b) high priority culturally significant site; listed in the schedule of the relevant water sharing plan; or A maximum of a 2 m decline cumulatively at any water supply work. ...	**Level 1 – Acceptable.** The closest high priority groundwater dependent ecosystem in the Lachlan Unregulated and Alluvial Water Sources, as listed in Schedule 4 of the *Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012*, is located more than 40 kilometres (km) from the CGO, outside of the extent of cumulative drawdown associated with the Modification (Appendix A). No high priority culturally significant sites are listed in the *Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012.* There are no other known areas of the saline alluvial aquifers surrounding the CGO. Coffey (2016) concluded that the groundwater drawdown due to open pit mining and dewatering for the Modification would be similar to drawdown associated with the approved CGO and would generally remain within ML 1535. Accordingly, there would be negligible impact to privately-owned registered bores. Therefore, the Modification is considered to adequately satisfy the watertable and water pressure minimal impact considerations relating to less productive alluvial water sources defined in the AIP.
<u>Water pressure</u> 1. A cumulative pressure head decline of not more than 40% of the "post-water sharing plan" pressure head above the base of the water source to a maximum of a 2 m decline, at any water supply work. ...	
<u>Water quality</u> 1. (a) Any change in the groundwater quality should not lower the beneficial use category of the groundwater source beyond 40 m from the activity; and (b) No increase of more than 1% per activity in long-term average salinity in a highly connected surface water source at the nearest point to the activity. Redesign of a highly connected surface water source that is defined as a "reliable water supply" is not an appropriate mitigation measure to meet considerations 1.(a) and 1.(b) above. (c) No mining activity to be below the natural ground surface within 200 m laterally from the top of high bank or 100 m vertically beneath (or the three dimensional extent of the alluvial water source - whichever is the lesser distance) of a highly connected surface water source that is defined as a "reliable water supply". ...	**Level 1 – Acceptable.** There are no other known areas of the saline alluvial aquifers surrounding the CGO. Coffey (2016) has concluded that groundwater quality would not change significantly during the operation of the Modification or post-closure, with the open pit continuing to act as a localised groundwater sink. Therefore, the existing beneficial use category of groundwater would not change due to the Modification (Appendix A). It has been concluded that there are no "reliable water supplies" within 200 m laterally of the CGO. Lake Cowal is an ephemeral lake, and is therefore not considered to be a "reliable water supply" (Appendix A). Therefore, it is assessed that the Modification adequately satisfies the water quality minimal impact considerations relating to less productive fractured rock water sources defined in the AIP.

Table A2-3
Minimal Impact Considerations for Less Productive Porous and Fractured Rock Water Sources

Aquifer	Porous Rock or Fractured Rock
Category	Less Productive Water Sources

Level 1 Minimal Impact Consideration	**Assessment**
<u>Watertable</u> 1. Less than or equal to a 10% cumulative variation in the watertable, allowing for typical climatic "post-water sharing plan" variations, 40 m from any: (a) high priority groundwater dependent ecosystem; or (b) high priority culturally significant site; listed in the schedule of the relevant water sharing plan; or A maximum of a 2 m decline cumulatively at any water supply work. ...	**Level 1 – Acceptable.** The closest high priority groundwater dependent ecosystem in the NSW Murray Darling Basin Fractured Rock Groundwater Sources, as listed in Schedule 3 of the *Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011*, is located more than 40 km from the CGO, outside of the extent of cumulative drawdown associated with the Modification (Appendix A). No high priority culturally significant sites are listed in the *Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011.* Coffey (2016) concluded that the groundwater drawdown due to open pit mining and dewatering would generally remain within ML 1535. Accordingly, negligible impacts to privately-owned bores is expected due to the Modification. Therefore, the Modification is considered to adequately satisfy the watertable and water pressure minimal impact considerations relating to less productive fractured rock water sources defined in the AIP.
<u>Water pressure</u> 1. A cumulative pressure head decline of not more than a 2 m decline, at any water supply work. ...	
<u>Water quality</u> 1. Any change in the groundwater quality should not lower the beneficial use category of the groundwater source beyond 40 m from the activity. ...	**Level 1 – Acceptable.** Coffey (2016) has concluded that groundwater quality would not change significantly during the operation of the Modification or post-closure, with the open pit continuing to act as a localised groundwater sink. Therefore, the existing beneficial use category of groundwater would not change due to the Modification (Appendix A). Therefore, it is assessed that the Modification adequately satisfies the water quality minimal impact considerations relating to less productive fractured rock water sources defined in the AIP.

Relevant Mitigation and Contingency Measures

The Hydrogeological Assessment (Appendix A) proposes a number of recommendations for the monitoring and management of any potential impacts to groundwater associated with the continuation of mining at the CGO for the Modification. The following measures are proposed:

- continued groundwater monitoring to validate the predictive modelling, particularly in the vicinity of the open pit, Tailings Storage Facilities and ML 1535 saline groundwater supply borefield (when in use);
- continued monitoring of groundwater salinity in the Bland Creek Palaeochannel Borefield to assess potential saline migration; and
- a final pit void water balance post-mine closure be conducted to assess long-term water levels in the pit void and the potential impact on groundwater quality in the immediate vicinity of the pit void.

In addition, the existing Groundwater Contingency Strategy for the management of groundwater levels in the Bland Creek Palaeochannel would continue for the Modification.

A2.1.4 Monitoring and Reporting of Volumetric Take

During mining operations, water accumulates within the open pit as a result of surface water runoff during wet weather and groundwater inflows from intersected aquifers. The pit dewatering programme is described in detail in the *Cowal Gold Operations Water Management Plan* (Evolution, 2015).

Within ML 1535, open pit dewatering is calculated and based on pumping rates from dewatering bores and in-pit sumps. All bores from the Bland Creek Palaeochannel Borefield and eastern saline borefield are metered to manage the quantity of water extracted from the borefields within relevant limits (Evolution, 2015).

A2.2 SURFACE WATER LICENSING REQUIREMENTS

A2.2.1 Lachlan Regulated River Source

Under the *Water Management Act, 2000*, the *Water Sharing Plan for the Lachlan Regulated River Water Source 2003* commenced on 1 July 2004 and was replaced on 1 July 2016. The *Water Sharing Plan for the Lachlan Regulated River Water Source 2016* covers licensed surface water accessed from the Lachlan River.

Clause 4 of the *Water Sharing Plan for the Lachlan Regulated River Water Source 2016* provides that the plan applies to the following waters:

> *(1) This Plan applies to the water source known as the Lachlan Regulated River Water Source (**this water source**) within the Lachlan Water Management Area.*
>
> ***Note.** The Lachlan Water Management Area was constituted by Ministerial order made under section 11 of the Act and published in the NSW Government Gazette No 180 on 23 November 2001 at page 9389.*
>
> *(2) This water source includes all water:*
>
> *(a) between the banks of all rivers, from the upper limits of Wyangala Dam water storage (**Wyangala Dam**) downstream to the junction of the Lachlan River with the Murrumbidgee River, which have been declared by the Minister to be regulated rivers, and*
>
> *(b) taken under a floodplain harvesting (regulated river) access licence with a share component that specifies this water source.*

The external make-up of water supply at the CGO is provided to the site via the mine borefield pipeline which draws water from the eastern saline borefield, the Bland Creek Palaeochannel Borefield and water extracted from the Lachlan River via the Jemalong Irrigation Channel. Water is currently extracted from the Lachlan River using regulated flow licences purchased by Evolution on the open market under the *Water Sharing Plan for the Lachlan Regulated River Water Source 2016.*

Access Licences

WALs issued by the DPI Water to Evolution under the *Water Management Act, 2000* are presented in Table A2-4. Evolutions' existing high security and general security WALs allow for the trade of temporary water (Appendix B).

Section 3 of the Main Report of the EA and Appendix B (Hydro Engineering & Consulting Pty Ltd, 2016) provide estimated surface water licensing requirements for the Modification.

For the Modification, the proposed external water supply arrangements would involve the continued use of WAL14981 as well as the purchase of temporary water from the Lachlan River regulated water source.

Table A2-4
Surface Water Licensing Summary

Licence Number	Licence Category	Date of Grant	Duration of Approval	Licence Allocation
WAL14981 (70WA603145)	High Security	15/09/2011	Ongoing	80 unit shares.
WAL13748 (70AL603332)	General Security	21/06/2006	Ongoing	Zero share component enabling temporary trade of water from regulated Lachlan River source.
WAL13749 (70AL603333)	High Security	21/06/2006	Ongoing	

Since the commencement of operations at the CGO there has been a reliable supply of temporary water available from the Lachlan River trading market, including during periods of drought. DPI Water trading records show that between approximately 4,000 ML and 274,000 ML of temporary water has been traded annually since records began in the 2004 to 2005 season (Appendix B).

Management of Access Licences

In accordance with Part 7, Division 2, clause 46 of the *Water Sharing Plan for the Lachlan Regulated River Water Source 2016*, the maximum volume that may be taken under a regulated river (general security) access licence from the Lachlan River Regulated Water Source during any water year shall be equal to 1 ML per share unit (or lower amount to maintain compliance with the long-term average annual extraction limit).

Evolution would continue to manage its general security and high security access licences such that extraction does not exceed the water allocation account in any water year in accordance with rules outlined in Part 7 and Part 9 of the *Water Sharing Plan for the Lachlan Regulated River Water Source 2016.*

A2.2.2 Western Bland Creek Water Source

The *Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012* commenced on 14 September 2012 under the *Water Management Act, 2000.*

The *Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012* applies to all unregulated water sources in the Lachlan catchment which occurs naturally on the surface of the ground, and in rivers, lakes and wetlands. The *Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012* would apply to any surface water excised from the Lachlan catchment that would otherwise have reported to the Lachlan River.

Within the *Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012,* the CGO is located within the Western Bland Creek Water Source, which has a total surface water entitlement of 2,275 ML/annum. Within the Western Bland Creek Water Source, there are currently 33 surface water licences (Appendix B).

Clause 12(1) of Part 1 of Schedule 1 of the *Water Management (General) Regulation, 2011* provides access licence exemptions under the *Water Management Act, 2000* for certain excluded works. Schedule 1 (Clause 4) of the *Water Management (General) Regulation, 2011* describes relevant excluded works as follows:

> *(4) Dams approved in writing by the Minister for specific environmental management purposes:*
>
> *(a) that are located on a minor stream, and*
>
> *(b) from which water is used solely for those environmental management purposes.*

On 7 January 2004, the then Minister for Natural Resources made an order pursuant to Section 5(1)(H) that under Part 2 of the *Water Act, 1912* certain works are not applicable. These works included any additional works which become part of the water management system for the CGO which are authorised to be constructed pursuant to ML 1535 granted by the Minister for Mineral Resources on 18 June 2003.

As there is no change to the Up-catchment Diversion System and Internal Catchment Drainage System proposed for the Modification, there is no change to the catchment excised by the Modification that would otherwise report to Lake Cowal, and therefore no access licences would be required for the Modification.

A2.3 FLOOD WORK APPROVALS

Former controlled works under the *Water Act, 1912* have been replaced with flood work approvals under the *Water Management Act, 2000*.

The *Water Management Act, 2000* includes transitional provisions to ensure that actions taken and approvals granted under Part 8 of the *Water Act, 1912* remain valid once the *Water Management Act, 2000* comes into effect.

Part 8, Division 1, Clause 165A(2) of the *Water Act, 1912* provides that a controlled work does not include the following:

> *(a) a work declared, by order of the Ministerial Corporation published in the Gazette, not to be a controlled work, and any work that forms or is intended to form part of, or is or is intended to be ancillary to, such a declared work, or*
>
> *...*

As detailed in Section A2.2.2 above, an exemption was granted under Part 8, Division 1, Clause 165A(2) of the *Water Act, 1912* for the management system currently in place at the CGO. In particular, this exemption specifically refers to the temporary isolation bund, the lake protection bund, the Up-catchment Diversion System and the Internal Catchment Drainage System. The order also applied to any additional works which become part of the water management system for the CGO.

A2.4 REFERENCES

Barrick (Cowal) Limited (2013) *Cowal Gold Mine Extension Modification Environmental Assessment.*

Coffey Services Australia Pty Ltd (2016) *Cowal Gold Operations Mine Life Modification Hydrogeological Assessment.*

Evolution Mining (Cowal) Pty Limited (2015) *Cowal Gold Operations Water Management Plan.*

Hydro Engineering & Consulting Pty Ltd (2016) *Cowal Gold Operations Mine Life Modification Hydrological Assessment.*

New South Wales Government (2012) *NSW Aquifer Interference Policy.* Released September 2012.

New South Wales Office of Water *(2012) Maximum Harvestable Right Calculator.*