BARRICK
COWAL

COWAL GOLD MINE

E42 MODIFICATION

Responses to Submissions

November 2008

ResourceStrategies

Barrick Australia Limited
Cowal Gold Mine E42 Modification Environmental Assessment
Responses to Submissions

Number	Subject	Issue	Response
1	Surface Water	Concern regarding the use of surface water runoff that would otherwise enter Lake Cowal.	The potential impacts associated with the use of surface water that would otherwise enter Lake Cowal are assessed in Section 4.5.2 of the Environmental Assessment (EA), as follows: *As part of the EIS* [Cowal Gold Project Environmental Impact Statement]*, a model of Lake Cowal and its catchment was used to investigate the potential effects that the mine would have on the water balance dynamics of Lake Cowal, including changes to average water levels in the Lake and changes to the frequency and volume of spills from Lake Cowal to Nerang Cowal downstream.* *The mine area is physically isolated from Lake Cowal by the lake isolation system (Section 2.8). The outer face of the isolation system extends approximately 1 km into Lake Cowal and will form a new lake foreshore. The excursion of the lake isolation system into the Lake floor has the potential effect of reducing the overall capacity of the Lake.* *The E42 Modification would not change the lake isolation system (which was constructed during the approved CGM construction phase and described in Section 2.8.2). Therefore, the EIS predictions made regarding changes to lake volume and the potential effects on runoff water quality remain the same (ibid.).* Contained water storage D9 is a "turkey's nest" dam. As described in Section 2.7 and shown on Figure 2-10 of the EA, water stored within this storage is water pumped from either the Bland Creek Palaeochannel, Lachlan River (via the Jemalong Irrigation Limited channel and Bland Creek Palaeochannel borefield pipeline) and contained water storages D1, D2, D8A and D8B (which collect sediment and water runoff).
2	Surface Water	Concern regarding surface water runoff in the area of the modified northern waste emplacement.	The proposed change to the Up-catchment Diversion System (UCDS) in the area of the expanded northern waste emplacement is described in Section 2.8.1 of the EA. This includes diversion of an existing drainage line around the proposed northern waste emplacement. The UCDS would allow upper catchment surface runoff to flow around the western, northern and southern edges of the site and into the existing drainage lines (as shown on Figure 2-11 of the EA). As stated in Section 2.8.1 of the EA: *The E42 Modification would result in changes to the alignment of the southern, western and north-eastern portions of the UCDS. The northern and north-western portions of the system would be diverted around the expanded northern waste emplacement (facilitated by the construction of the northern bund), as shown on Figure 2-11.*

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3	Surface Water	Concern regarding spillage of contaminated water from the final void.	Water levels within the final void are assessed in Section B5.2.1 of the Hydrological Assessment, Appendix B of the EA, as follows: *Modelling indicates that the void would fill slowly reaching relative level (RL) 48 m Australian Height Datum (AHD) after about 200 years – refer Figure B-5. Ultimately it would reach an equilibrium water level which is estimated to be between RL 140 m AHD and RL 150 m AHD. This is lower than the original predictions due to lower groundwater inflows and higher evaporation rates from the larger void surface area.* That is, relative to the natural ground surface, the equilibrium water level of the modified Cowal Gold Mine (CGM) void (i.e. between RL 140 m AHD and RL 150 m AHD) would be approximately 53 m to 63 m below the original ground level at the low point in the perimeter of the open pit. Section B6 of the Hydrological Assessment, Appendix B of the EA states: *The slower fill rates, the lower final void water level and the slower rate of increasing salinity in the void would enhance the long-term isolation and disconnection of the final void from Lake Cowal…*
4	Surface Water	No risk assessment undertaken to determine the potential impact of flooding at the mine site.	As stated in the EIS, in flood conditions Lake Cowal overflows into Nerang Cowal to the north which in turn overflows to Manna Creek, Manna Swamp, Bogandillon Creek then into Bogandillon Swamp and ultimately into the Lachlan River (North Limited, 1998). During such conditions, the full storage level of Lake Cowal is RL 205.65 m AHD (*ibid.*). The lake isolation system has been constructed to a height above the full storage level of the Lake, and would remain so for the modified CGM. The CGM water management system has been designed such that the ecological integrity of the Cowal wetland system is not compromised. Mine infrastructure and landforms have been constructed within a contained catchment (i.e. the Internal Catchment Drainage System [ICDS]). The ICDS combines with the lake isolation system to protect Lake Cowal from CGM development activities. The lake isolation system comprises a temporary isolation bund and a permanent isolation bund (i.e. lake protection bund). The lake protection bund comprises a large engineered embankment that provides a permanent barrier between the lake and the open pit. Runoff from areas upslope of the ICDS is diverted via an UCDS, around the CGM to the lake. The overall effect of the modified CGM on site water management is assessed in the Hydrological Assessment, Appendix B of the EA, using the CGM water balance model. Consistent with the original model assessment undertaken for the EIS, the performance of the water management system has been assessed using various climatic scenarios including wet or "flood" conditions. The wet sequence was set to the wettest 20 consecutive year periods on record. The results of the model showed that there were no simulated spills from any of the internal site storages and, in particular, any instances of external spill.
5	Surface Water	Storage of water that is not consistent with the exemptions for Maximum Harvestable Right Dam Capacity (MHRDC) would require licensing from Department of Water and Energy (DWE).	Acknowledged.

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6	Surface Water	Water collection both within and outside of the ICDS within Mining Lease (ML) 1535 should be consistent with the MHRDC and associated exemptions.	The E42 Modification proposal does not include collection of water outside the CGM ICDS, includes containment of surface water for erosion and sediment control and therefore would not be subject to the requirements of MHDRC. Should Barrick pursue the surface water collection water supply augmentation option included in Section 2.7 of the EA, the proposal would be in accordance with the requirements of the MHRDC.
7	Surface Water	The extraction of groundwater and surface water that enters the open pit should be quantified. This volume is to be included in the volume allowed under the dewatering bore licences.	Table A-4 of EA Appendix A quantifies the volume of ground and surface water which enters the open pit (i.e. ground and surface water that has collected in the in-pit sumps) as approximately an average of 11.4 megalitres [ML]/month which equates to an annual extraction of approximately 140ML. Surface water entering the open pit comprises runoff generated from incident rainfall. Approved CGM water licenses allow extraction of a total volume of 3660MLpa from open pit dewatering bores. Section A5.2 of EA Appendix A reports the expected trend of open pit dewatering bore extraction rates …*to stabilise at 13 to 15 ML/month*… (i.e. approximately 156 to 180 MLpa). The combined volume of water recovered/extracted from in-pit sumps and open pit dewatering bores (i.e. up to 320 MLpa) is well within the above licensed entitlement for open pit dewatering bores. As recommended by the CGM Independent Monitoring Panel, a water use balance (including water extracted from the open pit) was reported in the CGM Annual Environmental Management Report (AEMR) in 2007 and will continue to be provided in future AEMRs. Water collected within the open pit is primarily groundwater inflow, with minor incident rainfall also contributing.
8	Surface Water	The Surface Water, Groundwater, Meteorological and Biological Monitoring Programme and Site Water Management Plan should be revised in consultation with DWE.	Barrick has committed to revising the Site Water Management Plan (Barrick, 2003) and Surface Water, Groundwater, Meteorological and Biological Monitoring Programme – Mine Operations (Barrick, 2005), in the Statement of Commitments (Section 6 of the EA). Barrick would revise the Site Water Management Plan and Surface Water, Groundwater, Meteorological and Biological Monitoring Programme in consultation with DWE.
9	Surface Water	Risks to local water resources, including contamination.	As described in Sections 2.8 and 4.5.1 of the EA, the approved CGM water management system has been designed such that the ecological integrity of the Cowal wetland system is not compromised. In particular, the approved CGM water management system is designed to contain potentially contaminated water (contained water) generated within the mining area and divert all other water around the perimeter of the site. The approved CGM water management system includes the following major components (as well as the pit dewatering system): • UCDS and ICDS (including the contained water storages); • lake isolation system (comprising the temporary isolation bund, lake protection bund and perimeter waste emplacement); and • integrated erosion, sediment and salinity control system. The approved UCDS allows upper catchment surface runoff to flow around the western, northern and southern edges of the site and into the existing drainage lines. The E42 Modification would result in changes to the alignment of the southern, western and north-eastern portions of the UCDS. The northern and north-western portions of the system would be diverted around the expanded northern waste emplacement (facilitated by the construction of the northern bund).

Number	Subject	Issue	Response
9 (Cont.)	Surface Water		Mine infrastructure and landforms have been constructed within the ICDS. The ICDS consists of contained water storages for CGM runoff (i.e. D1, D2, D3, D4, D5, D8A and D8B) and the internal catchment divide (i.e. a bund constructed on the outer bounds of the CGM catchment to direct runoff toward the contained water storages). Changes to the current ICDS as a result of the E42 Modification include: an increase in storage capacity of D2 and D8B for containment of runoff from larger catchment areas; removal of D8A once the modified open pit encroaches on the D8A footprint and replacement by an increase to D8B; and minor changes to collection drains around enlarged stockpile and waste emplacement areas. As described in Section 2.8 of the EA, the ICDS combines with the lake isolation system (which comprises the temporary isolation bund and permanent lake protection bund) to isolate Lake Cowal from mine development activities. The lake protection bund comprises a large engineered embankment that provides a permanent barrier between Lake Cowal and the open pit. Runoff from areas upslope of the ICDS is diverted via an Up-catchment Diversion System (UCDS), around the mine area to the Lake Cowal. No change to the temporary isolation bund or lake protection bund is proposed as a result of the E42 Modification. Sediment control structures, dams and waterways around individual infrastructure components have been constructed at the approved CGM as part of the ICDS. The E42 Modification would result in the relocation of some of the existing sediment and erosion control structures to accommodate the increase in the area of the waste emplacements. The ICDS has remained isolated from Lake Cowal for approved CGM operations to date, as reported in the Cowal Gold Project 2007 Annual Environmental Management Report (Barrick, 2008).
10	Visual Amenity	Concern regarding the potential impact on nearby residents of night-lighting, including that from light towers on top of the waste emplacements.	Potential night-lighting impacts resulting from the E42 Modification are assessed in the Visual Assessment, Appendix I of the EA, and are summarised in Section 4.3.2 of the EA as follows: *The E42 Modification would vary the effects of existing night-lighting (i.e. visible at additional locations due to increased elevations of some light sources) over the life of the modified CGM (Appendix I).* *As discussed in Appendix I, the nature of night-lighting for the modified CGM would be of a similar intensity when compared to the existing night-lighting at the approved CGM. However, there is potential for the fixed lights to be visible from a wider area surrounding the ML due to the increased elevations of the waste emplacements.* Night-lighting mitigation measures would be implemented for the modified CGM, as stated in the Statement of Commitments (Section 6 of the EA): *Measures that will be employed to mitigate potential impacts from night-lighting will include one or more of the following, where practicable:* • *Scheduling of mining operations, where practicable, so that evening and night-time operations on the waste emplacements will be located on the southern waste emplacement (i.e. the lower waste emplacement) to reduce the potential for direct lighting impacts to locations north of ML 1535.* • *Restriction of night-lighting to the minimum required for operations and safety requirements, where appropriate.* • *Use of unidirectional lighting techniques, where practicable.* • *Use of light shields to limit the spill of lighting, where practicable.* • *Provision of curtains, cladding and/or screens at nearby dwellings to help screen any potential night-time lighting impacts, in consultation with the landholder.* • *Planting of trees at nearby dwellings to help screen any potential night-time lighting impacts, in consultation with the landholder.*

Number	Subject	Issue	Response
10 (Cont.)			In addition to the above measures and where practicable, waste rock dumping would be scheduled such that elevated bunds of waste rock are placed between primary work areas and residences to mitigate potential impacts from night-lighting.
11	Visual Amenity	Concern that night-lighting mitigation measures would not be implemented.	Night-lighting mitigation measures that would be implemented for the modified CGM are stated in the Statement of Commitments (Section 6 of the EA). Barrick anticipates that the Minister for Planning would require the modified CGM to be carried out in accordance with the Statement of Commitments.
12	Visual Amenity	Concern regarding the potential visual impact resulting from the increased elevation of mining landforms.	Visual impact associated with increased elevation of mining landforms is assessed in the Visual Assessment, Appendix I of the EA. The potential visual impact was assessed by evaluating the level of visual modification of the development in the context of the visual sensitivity of relevant surrounding landuse areas (i.e. those areas from which the proposed development may be visible). The Visual Assessment was conducted to identify areas where potential visual impacts are most likely to occur as a result of the modified CGM and to assist in the mitigation of those impacts from sensitive viewpoints. The assessment process focussed on the potential visual impact from routinely accessed or readily accessible viewpoints in the most sensitive visual settings/landuses. The assessment was undertaken from within regional (>5 km), sub-regional (1 to 5 km) and local (<1 km) settings. A summary of the Visual Assessment locations analysed is provided in Table 4-5 of Section 4 of the EA. Table 4-5 of Section 4 of the EA presents a summary of the Visual Assessment. The summary shows that locations within the regional and sub-regional settings (i.e. "Gumbelah", "Coniston" and "Westlea" dwellings) would have a low potential impact after amelioration and locations within the local setting (i.e. locations along Lake Cowal Road) would have a moderate to low potential visual impact after amelioration.
13	Visual Amenity	Concern regarding Visual Assessment methodology, including: • levels of scenic quality attributed to the landscape; • consideration of scenic quality of Lake Cowal when full.	The methodology employed during the preparation of the Visual Assessment, Appendix I of the EA, was as follows: • Review previous visual assessment reports undertaken for the approved CGM. • Characterise the existing landscape and visual setting. • Examine the main aspects of the modified CGM. The methodology employed by the visual assessment is based on the United States Department of Agriculture – Forestry Service (1974) methodology. The methodology is an accepted method for undertaking visual assessments in NSW, having been used as part of environmental assessments for other contemporary major projects (including mines) in NSW. As stated in Section I3.1 of the EA, it has been established through previous studies that scenic quality increases as topographic ruggedness and relative relief increase. Scenic quality can also increase as the patterning of vegetation increases. These attributes were taken into account when considering the scenic quality of the regional, sub-regional and local settings. The regional settings was found to have attributes of moderate to high scenic quality due to the presence of a wooded north-south oriented ridgeline system as well as attributes of low scenic quality due to the generally flat, cleared dryland agricultural areas that dominate the landscape. Most of the Lake Cowal area (i.e. within the sub-regional setting), including the Lake itself, has been cleared for grazing and/or cultivation which results in a low to moderate scenic quality. Lake Cowal was historically substantially inundated seven years out of ten, however there has been no substantial water in Lake Cowal since 1995.

Number	Subject	Issue	Response
13 (Cont.)	Visual Amenity		The local setting has been heavily modified over time with the majority of vegetation disturbed by historic agricultural clearing and the approved CGM, which includes a number of modifying elements including active tailings storage facilities and waste emplacements, process plant and infrastructure areas and a mine access road. The overall visual character of the local setting is considered to be of low scenic quality. As described in Section I3.1 of the Appendix I of the EA, Lake Cowal is listed on the Register of National Estate, however no aspects relating to visual amenity are described (Department of Environment, Water, Heritage and the Arts, 2008). Lake viewpoints, including the Game Reserve, are included in the assessment of potential impacts. With regard to potential impacts from the Game Reserve, Section I5.1 of Appendix I of the EA states: *Potential views of the ML from the Game Reserve are restricted by intervening screening vegetation (particularly along the south-western fringe of Lake Cowal) and flat topography. Potential north-westerly views of the modified CGM landforms would be available due to the flat lake-bed topography and absence of screening foreground vegetation on Lake Cowal. These views would mostly be restricted to portions of the active waste emplacements and relate to a small extent of the overall viewscape. The potential visual impact at the Game Reserve would occur during the latter years of the modified CGM, when the heights of the waste emplacements increase beyond their currently-approved elevations. Given the distance of the Game Reserve from the ML and that the modified CGM landforms would comprise a small proportion of the viewscape (remaining also below the vegetated ridgeline to the north-west), the level of visual modification would be low. The distance of the Game Reserve from the ML together with the nature of its use (i.e. recreational use including fishing) means the visual sensitivity of this location would be moderate. The low level of visual modification coupled with the moderate level of visual sensitivity means the level of potential visual impact on users of the Game Reserve would be moderate to low. This level of potential visual impact would progressively reduce once vegetation cover begins to establish on the rehabilitated waste emplacements.*
14	Air Quality and Greenhouse Gas Emissions	Concern regarding dust generation and potential heavy metal contamination of nearby properties, Lake Cowal and regional townships (including potential impacts on humans, fauna and flora), and length of time since studies undertaken to investigate this issue.	Potential dust and suspended particulate matter emissions resulting from the E42 Modification are assessed in the Air Quality Assessment, Appendix G of the EA, and are summarised in Section 4.9.2 of the EA. The background levels adopted for the Air Quality Assessment include contribution of dust emissions from the approved CGM and would therefore provide for a conservative cumulative assessment. In summary, modelling results showed that air quality emissions (i.e. deposited dust and suspended particulate matter [PM_{10}, TSP]) would remain within relevant Department of Environment and Climate Change (DECC) criteria at all receptors. The nearest receptors are private residences. The potential impacts on fauna associated with movement of dust on fauna are discussed in Section 4.7.2 of the EA: *The approved CGM operates with a dust monitoring programme and a Lake Cowal monitoring programme. These programmes would continue for the modified CGM as further discussed in Section 4.9.3. Analysis of monitoring results indicates that the area generally experiences, on average, dust deposition levels below 4 g/m^2/month (Appendix G). No evidence of adverse impacts to fauna from dust have been identified to date (Barrick, 2005b, 2006a, 2007a, 2008a).* *It is unlikely that any vertebrate species would be impacted either directly or indirectly by any dust increase generated as a result of the E42 Modification.*

Number	Subject	Issue	Response
14 (Cont.)	Air Quality and Greenhouse Gas Emissions		The potential impacts of dust on vegetation are discussed in Section 4.6.2 of the EA: *Studies have shown that excessive dust can impact on the health and viability of vegetation. Dust can affect vegetation by inhibiting physiological processes such as photosynthesis, respiration and transpiration, and allow penetration of phytotoxic gaseous pollutants (Farmer, 1993; Eller, 1977).* *A study on the effect of dust on photosynthesis and its significance for plants (Thompson et al., 1984) found that photosynthesis and leaf diffusion resistance was reduced at 5 to 10 grams (g) of dust per square metre (m2) leaf surface.* *The survey of the vegetation communities in the E42 Modification disturbance area did not identify dust impacting the vegetation condition, despite their locations immediately adjacent approved CGM dust-generating activities.* *An assessment of the potential generation and dispersion of atmospheric dust resulting from the modified CGM was carried out by Holmes Air Sciences and is presented in Appendix G.* *Given that predicted dust deposition contours (Appendix G) indicate that levels of approximately 0.4 grams per square metre per month (g/m2/month) or less are predicted to be contributed from the modified CGM or a total of 3.2 g/m2/month or less with background contributions, vegetation species diversity and abundance in areas outside the ML are unlikely to be deleteriously affected. Further, the approach used by Holmes Air Sciences for predicting dust concentrations provides for a conservative assessment because the background levels are likely to include some contribution from the approved CGM (Appendix G). Potential dust impacts are discussed in Section 4.9, along with proposed dust controls.* With regard to potential impacts of increased dust levels on Lake Cowal, the assessment found that the atmospheric dust emissions produced by the approved CGM would increase as a result of the modified CGM to predicted levels of deposition from approximately 0.05 g/m^2/month up to 2 g/m^2/month over Lake Cowal. Conservatively assuming a deposition level of 1 g/m^2/month over the total Lake Cowal surface area, levels of turbidity in the lake would not be expected to increase measurably as a result of dust deposition onto the lake. Baseline monitoring records show Lake inflows from Bland Creek and the Lachlan River contain elevated levels of turbidity up to 224 milligrams per litre (mg/L) suspended solids. As previously identified in the Commission of Inquiry report (Train, 1999), other sources of turbidity such as carp foraging and wave suspension of sediment would also exist. The potential impact of dust deposition onto Lake Cowal is therefore considered negligible. Heavy metal concentrations within dust samples are currently analysed as a component of the approved CGM air quality monitoring programme. This includes analysis for aluminium, arsenic, cadmium, copper, lead, selenium and zinc. The most recent analysis of metals in dust samples was undertaken by Dr Stephen Cattle of the University of Sydney, and is presented in the report *Interpretation and Discussion of 2007 Air Quality Monitoring Results Cowal Gold Project* (Cattle, 2008). During the reporting period, material types mined included ore and waste. Mostly sulphide ores were extracted, with some oxide ores being stockpiled for later use. Dr Cattle concluded the following: *The arsenic, copper and selenium contents of the four sets of deposited dust samples analysed in 2007 were small or non-detectable.* *Of the detectable metals, aluminium and lead were generally present in concentrations typical of regolith materials...The concentrations of aluminium in the dust samples are attributed to the prominence of aluminium in the crystal structures of a variety of clay minerals that are likely to be inorganic components of most dust deposits.*

Number	Subject	Issue	Response
14 (Cont.)	Air Quality and Greenhouse Gas Emissions		It is likely that levels of cadmium and zinc in the 2007 dust data (excluding erroneous and contaminated results) would have been either non-detectable or representative of regolith materials (Dr Stephen Cattle, pers. comm., 2008). Further, a Tailings and Waste Rock Geochemical Assessment was undertaken for the E42 Modification and is included as Appendix C of the EA. With regard to waste rock from the modified pit, the assessment found that geochemical characteristics (including element enrichment) "*are expected to be similar to the characteristics of the waste rock from the approved CGM*". The Tailings and Waste Rock Geochemical Assessment also found that the "*results of the geochemical characterisation* [including element enrichment] *of discharge and deposited primary and oxide tailings confirm the findings from previous investigations*". The heavy metal content of dust emissions from the modified CGM would therefore be expected to be similar to those recorded to date. As stated in Section 4.9.3 of the EA, the mitigation and management measures for wind blown and mine generated dust at the approved CGM are presented in the Dust Management Plan (DMP). The DMP includes: • relevant air quality criteria that apply to the mine; • air quality control measures (e.g. areas for soil stripping will be minimised, all roads and trafficked areas will be watered, freefall height during ore/waste stockpiling will be limited, etc.); • the air quality monitoring programme; • stakeholder consultation and notification requirements; • complaint resolution and property acquisition requirements; and • reporting requirements for dust related issues. The mitigation and management measures described in the DMP would continue to be implemented for the modified CGM.
15	Air Quality and Greenhouse Gas Emissions	Concern regarding the amount of emissions of greenhouse gases, including concern that the proposed offset area would not offset the increase in greenhouse gases.	The Air Quality Assessment, Appendix G of the EA, included the estimated emission of greenhouse gases over the life of the modified CGM and described management and measures to minimise greenhouse gas emissions associated with the modified CGM, in accordance with the Director-General's Requirements (DGRs). The Air Quality Assessment also noted that mitigation of greenhouse gas emissions is inherent in the development of the mine plan. For example, reducing fuel usage by mobile plant is an objective of mine planning. Hence, significant savings of greenhouse gas emissions can be attributed to appropriate mine planning. Further, an Energy Savings Action Plan would be developed for the modified CGM, as stated in the Statement of Commitments (Section 6) of the EA: *An ESAP will be prepared that will describe energy efficiency measures to be employed to minimise greenhouse gas emissions from the modified CGM. The process for developing the ESAP will involve the following:* • *determining current energy use;* • *undertaking an energy management review;* • *undertaking a detailed technical review; and* • *assessing and identifying energy savings measures.*

Number	Subject	Issue	Response
15 (Cont.)	Air Quality and Greenhouse Gas Emissions		*The ESAP will detail procedures/measures to manage/minimise greenhouse gas emissions associated with the modified CGM including:* • *regular maintenance of plant and equipment to minimise fuel consumption; and* • *consideration of energy efficiency in plant and equipment selection/purchase.* Although it would contribute, the proposed offset is for offsetting biodiversity impacts, not greenhouse gases.
16	Hazard and Risk	Concern regarding the incremental increase in the amount of cyanide to be transported to the mine.	Transport risks associated with the approved CGM (including those associated with transport of cyanide) were analysed in the Transport of Hazardous Materials Study (THMS) (approved January 2006 – addendum approved February 2007), which is described in Section 4.10.3 of the EA. The THMS includes a detailed plan of actions to be undertaken to mitigate the potential effects of any spill of hazardous material (including cyanide) during transport to the CGM. As stated in Section 4.15.2 of the EA: *The E42 Modification would not introduce new hazardous materials or change the transport routes for the hazardous materials previously assessed in the THMS or increase the frequency of deliveries or quantities per delivery to the extent that it would change the risk levels previously assessed.*
17	Hazard and Risk	Concern regarding no Preliminary Hazard Analysis undertaken for the proposed saline groundwater supply borefield.	A hazard analysis was conducted for the saline groundwater supply borefield to augment the Preliminary Hazard Analysis (PHA) conducted for the EIS and the approved Final Hazard Analysis (FHA) conducted for the approved CGM. The results of this hazard analysis are presented in Section 4.15.2 of the EA, as follows: *The assessment of risks for the saline groundwater supply borefield involved the application of the following basic steps undertaken for the PHA and FHA, including:* • *assessment of the hazard potential of the materials involved;* • *identification of the potential hazardous events (including incidents involving the materials and site/transport specific occurrences);* • *evaluation of the consequences of the potential hazardous events;* • *evaluation of the likelihood of the potential hazardous events; and* • *assessment of the risk of the potential hazardous events.* *Hazards identified as relevant to the saline groundwater supply borefield were limited to the following incident types:* • *potential leaks or spills from failure of the saline groundwater supply pipeline delivering water from the borefield to the CGM process water dam (D6); and* • *potential public safety risks due to possible accidental damage to borefield infrastructure during a lake full scenario.* *These incident types were assessed to potentially result in the release of saline water into Lake Cowal (only when dry) or areas outside the Lake and potentially result in public safety issues.*

Number	Subject	Issue	Response
17 (Cont.(	Hazard and Risk (Continued)		*The maximum reasonable consequence of the hazards was assessed as minor (i.e. hazards that could cause minimal localised environmental harm associated with elevated levels of TDS[1] or result in a medical treatment injury [Pinnacle Risk Management, 2004a]). A probability assessment concluded these would be rare events (i.e. unusual and conceivable, but only in extreme circumstances).* *An assessment of the combination of the consequence and probability rankings concluded that the overall risk rankings for the above hazards would be low, and therefore tolerable.* Proposed preventative and control measures to address potential hazards are discussed in Section 4.15.3 of the EA.
18	Hazard and Risk	Concern regarding hazards associated with the saline groundwater supply borefield, including: • potential leaks from failure of the saline groundwater supply pipeline delivering water from the borefield, including concern regarding potential increases in soil salinity; and • hazard prevention measures to be implemented for the saline groundwater supply borefield when the borefield is inundated by Lake Cowal.	Potential leakage from failure of the saline groundwater supply pipeline delivering water from the borefield (including potential increases in soil salinity) is assessed in Section 4.2.2 of the EA: *Leakage of saline water (prior to automatic shut-down) into a dry Lake Cowal would increase the salinity of the soil in the local area surrounding the pipeline rupture in the unlikely event this occurs. This localised increase in soil salinity would be minimal (given the leak detection and automatic shut-down mechanisms inherent in the design of the system) and would be cleaned up quickly by the removal of affected material for disposal within the waste emplacement(s).* *When Lake Cowal contains sufficient water to inundate the borefield, its operation would cease, thereby removing the potential for saline water leakage.* Proposed mitigation measures to address pipeline failure and leakage of saline water from the saline groundwater supply pipeline are described in Section 4.2.3 of the EA: *The SWMP would be revised to include changes to water management required for the modified CGM, including mitigation measures for the saline groundwater supply borefield, viz.:* • *installation of a containment drain for the saline groundwater supply borefield pipeline; and* • *leak detection mechanisms including automatic shutdown capability.* *In the unlikely event of pipeline failure and leakage of saline water, the spill would be controlled, contained and cleaned-up in accordance with the spill response procedures described in the HWCMP.* With regard to hazard prevention measures to be implemented for the saline groundwater supply borefield when the borefield is inundated by Lake Cowal, Section 2.7 of the EA states: *The borefield would be operated during times when the borefield is not inundated by Lake Cowal.* Further, the modified CGM saline groundwater supply borefield control and/or preventative measures proposed for implementation are stated in Section 4.15.3 of the EA, and would include: *shut-down and removal of pumps during periods when the borefield is inundated by Lake Cowal;…*

[1] This assessment assumes the implementation of preventative and control measures.

Number	Subject	Issue	Response
19	Hazard and Risk	Concern regarding potential bushfire risk associated with Barrick's revegetation area to the west of the mine.	In addition to environmental responsibilities, significant economic incentives exist to prevent fire damage to the considerable investment in mining infrastructure and equipment at the CGM. The Emergency Response Plan (ERP) (approved June 2005) details responsibilities in the event of emergencies in and around the CGM area, and describes bushfire emergency response and evacuation procedures. As stated in Section 4.2.3 of the EA, *bushfire management measures are detailed in the Bushfire Management Plan (BMP) (approved August 2003), which provides for the following:* • *fuel management and hazard reduction strategies;* • *procedures for the detection, reconnaissance and reporting of fires;* • *details of fire fighting activities;* • *provision of adequate fire breaks/protection works and fire fighting equipment on-site (including one emergency fire fighting unit); and* • *provision of appropriate staff training (relating to bushfires).* *The above measures would continue for the modified CGM.* Additionally, Barrick is currently establishing a firebreak along the boundary of the native revegetation area to the west of the ML.
20	Hazard and Risk	Concern regarding the potential for earthquake in the region of the CGM.	As a component of the Long Term Compatibility Study (Appendix N) of the EIS, the effect of the stability of the lake protection bund under maximum credible earthquake (i.e. 1 in 50,000 year event) (dynamic stability) was modelled using Fast Lagrangian Analysis of Continua (FLAC) for dynamic mechanic simulation. Using FLAC, the perimeter bund was constructed and allowed to reach a state of equilibrium before application of the earthquake loading (Knight Piésold, 1997). Results from the dynamic analysis revealed that no significant deformations of the slopes of the lake protection bund are expected. The bund may experience some deformations up to 30 mm in the area around its highest point but they should not lead to slope failure (Knight Piésold, 1997). Knight Piésold (1997) concluded that the design of the lake protection bund therefore ensures that there is negligible risk of environmental contamination or loss of life resulting from failure of these facilities. As stated in Section 2.8.2 of the EA: *No change to the…lake protection bund is proposed as a result of the E42 Modification.*

Number	Subject	Issue	Response
21	Rehabilitation	Concern regarding the types of materials to be used for revegetation.	As described the EA, rehabilitation materials would be selected according to their suitability as growth media for revegetation species and ability to provide for long-term stability. As stated in Section 5.5 of the EA: *Research trials undertaken at the approved CGM have included:* • ***Material Amelioration*** *– Investigation into the chemical and physical properties of a range of topsoils and the optimum rates of gypsum application to improve their stability and structure.* • ***Rehabilitation Media*** *– Investigation into the relative effectiveness of different mulch treatments (i.e. pasture hay, lucerne hay, cattle manure, woodchips, rock, timber and a control) and soil types (i.e. oxide waste and topsoil only versus oxide waste/subsoil/topsoil) (Smit, 2007).* *These and future trials (e.g. studies into water management and landform slope design) would be used to determine the suitability of different rehabilitation materials and cover depths, particularly in terms of native plant establishment and relative slope stability.* *Subject to the outcome of further monitoring and trials, and in consultation with the relevant regulatory authorities, this may result in changes to the rehabilitation materials and cover depths used on the waste emplacements and tailings storage facilities. However, the rehabilitation treatments and cover depths selected would be consistent with the rehabilitation objectives described in Section 5.1.*
22	Rehabilitation	Concern regarding Barrick's commitment to rehabilitate the mine following cessation of mining.	As stated in Section 5.6.3 of the EA: *Upon the cessation of mining operations, tenure of ML 1535 would be maintained by Barrick until such a time when lease relinquishment criteria (required by the DPI-MR* [Department of Primary Industries – Mineral Resources] *and the DoP* [Department of Planning]*) are satisfied.* Notwithstanding the above, DPI-MR policy requires that security deposits must cover the full rehabilitation costs of activities on mining titles in NSW. This long-standing requirement is intended to minimise potential liabilities to the State in the event that a titleholder defaults on their rehabilitation obligations. Barrick has provided the DPI-MR with a financial security deposit for the approved CGM. Calculation of the financial security deposit for the CGM was conducted in accordance with the NSW DPI-MR's guideline, *Rehabilitation Security Deposit Requirements for Mining and Petroleum Titles* (June 2006). The financial security deposit would be reviewed for the E42 Modification, in consultation with DPI-MR.
23	Rehabilitation	Timing of rehabilitation.	As stated in Section 5.2 of the EA: *Approximately 118 ha of land within ML 1535 is under rehabilitation (i.e. either shaped and covered or rehabilitated and under maintenance) (Barrick, 2008a). Components currently under rehabilitation include:* • *northern tailings storage facility (starter embankment) (shaped and covered);* • *perimeter waste emplacement (southern section shaped and covered);* • *temporary isolation bund (shaped and covered);* • *lake protection bund (shaped and covered);* • *UCDS (rehabilitated and under maintenance);* • *components of the ICDS (rehabilitated and under maintenance);* • *water supply pipeline (rehabilitated and under maintenance); and* • *contained water storage D9 (shaped and covered).*

Number	Subject	Issue	Response
23 (Cont.)	Rehabilitation (Cont.)		*Amenity plantings have also commenced around the ML 1535 boundary.* Figures 2-2 to 2-4 of the EA show the progressive rehabilitation concepts for the modified CGM. Further, as stated in the Statement of Commitments (Section 6) of the EA: *Progressive rehabilitation of waste emplacements and tailings storage facilities will be undertaken to reduce the contrast between the modified CGM landforms and the surrounding landscape. This will include progressive rehabilitation with selected grass, shrub and/or tree species in accordance with the modified CGM Rehabilitation and Landscape Management Strategy (Section 5).*
24	Flora and Fauna	Concern regarding potential impacts of cyanide-bearing water on fauna.	As described in Section 4.7.2 of the EA, the approved CGM Development Consent requires cyanide concentrations of the aqueous component of the tailings slurry stream to not exceed 20 mg/L weak acid dissociable cyanide [CN_{WAD}] (90 percentile over six months) and 30 mg/L CN_{WAD} (maximum permissible limit at any time) at the discharge point to the tailings storage facilities. The SIS reported that the findings of Donato (1997) indicated that fauna mortalities approach zero at CN_{WAD} concentrations below 50 mg/L. Monitoring conducted to date indicates the approved CGM has complied with these limits (Barrick, 2007a, 2008a). As stated in Table 1-1 of Section 1 of the EA, the concentration limits would not change for the modified CGM.
25	Flora and Fauna	Concern regarding potential impacts to flora and fauna of the area, including: • potential impacts to the Myall Woodland Endangered Ecological Community (EEC) and Lake Cowal (as a significant waterbird concentration zone and "Natural" place on the Register of the National Estate); and • potential impacts to threatened species, including the Grey-Crowned Babbler.	The Flora and Fauna Assessments, Appendices D and E of the EA, respectively, include assessments of potential impacts to flora and fauna of the area, including potential impacts to threatened species and ecological communities as well as matters of national environmental significance and other matters protected by the *Environment Protection and Biodiversity Conservation Act, 1999*, *viz.* Lake Cowal which is registered as a "Natural" place on the Register of the National Estate. These assessments are summarised in Sections 4.6 and 4.7 of the EA. With regard to potential impacts to the Myall Woodland Endangered Ecological Community (Myall Woodland EEC), Section 4.6.2 of the EA describes that approximately 15 ha of Myall/Belah Woodland (equivalent to the Myall Woodland EEC) would be cleared or modified for the E42 Modification. Section 4.6.2 states that clearing native vegetation is a key threatening process listed under the *Threatened Species Conservation Act, 1999* (TSC Act) and the *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act), however, the vegetation clearance required for the E42 Modification is unlikely to significantly impact any vegetation communities, given: • *the relatively small areas of climax vegetation required to be cleared;* • *all vegetation communities have been subject to partial or nearly complete land clearing; and* • *the disjunct nature of the vegetation patches that are located adjacent to approved mine infrastructure.* With regard to potential impacts to Lake Cowal as a significant waterbird concentration zone and "Natural" place on the Register of the National Estate, the following potential impacts on vertebrate fauna species were identified and evaluated by the EA: • habitat removal/modification resulting from the E42 Modification; • fauna mortality via vehicular strike; • effects of noise on wildlife; • disturbance of routine activities of vertebrate fauna, particularly birds, from blasting overpressure and vibration; • affectation of behavioural patterns of some fauna species resulting from artificial lighting; • increased exposure to cyanide in the tailings water given the extension of the life of the mine; • movement of atmospheric dust emissions to Lake Cowal; • predation, competition and grazing by introduced fauna species; and • interaction with the final void.

Number	Subject	Issue	Response
25 (Cont.)	Flora and Fauna (Cont.)		The likelihood for the modified CGM to affect threatened fauna species, including the Grey-crowned Babbler (*Pomatostomus temporalis temporalis*), was considered in the Fauna Assessment. As stated in Section 4.7.2 of the EA, the Fauna Assessment concluded the following: • *It is likely that the vertebrate fauna values of the region would be maintained and possibly improved, considering the proposed measures to avoid, mitigate and/or offset potential impacts (Section 4.7.3).* • *The E42 Modification is unlikely to reduce the long-term viability of any local population of vertebrate fauna species.* • *The E42 Modification is unlikely to lead to the extinction of any vertebrate fauna species or population or place any at risk of extinction.* • *The E42 Modification would not adversely affect critical habitat as no critical habitats are known to occur within the E42 Modification area.* • *The E42 Modification is very unlikely to adversely affect areas of high conservation value.* • *Habitat that would be removed or modified by the E42 Modification is not considered to adversely affect the long-term viability of any vertebrate species, population or ecological community.* • *Matters of national environmental significance or other matters protected by the EPBC Act relevant to fauna are not likely to be significantly affected by the E42 Modification.* • *Given the above, from a regional perspective, biological diversity is likely to be maintained and potential adverse effects from the E42 Modification on vertebrate fauna are likely to be minimal.* The Flora and Fauna Management Plan (FFMP) and Implementation of the Threatened Species Management Protocol (TSMP) include mitigation measures and management for fauna, including threatened fauna. In particular, the TSMP includes a threatened species management strategy for woodland birds, including the Grey-crowned Babbler. As stated in Section 4.7.3 of the EA, the FFMP would be revised to include the E42 Modification and the TSMP would be continued for the modified CGM.
26	Flora and Fauna	Concern that the offset areas would not be available for agricultural purposes.	The purpose of the offset would be to provide for the maintenance or improvement of biodiversity values in accordance with the objectives of *the Draft Guidelines for Threatened Species Assessment (DEC and DPI, 2005)*, as stated in Section 4.6.3 of the EA: *The DGRs (Attachment 1) require a description of the measures that would be implemented to ensure there is no net loss of the biodiversity values of the region in the medium to long-term[2].* *The following discussion describes an offset which, when combined with the mitigation measures described above and the rehabilitation proposal described in Section 5, would maintain or improve biodiversity values in accordance with the objectives of the Draft Guidelines for Threatened Species Assessment (DEC and DPI, 2005).* *This requirement is taken to be relevant only to Barrick CGM activities.* Areas proposed for offset are located on land owned by Barrick. Barrick would continue to maintain access to the Lake for property management purposes. In order to secure the conservation of the offset areas, the relevant landholdings would be rezoned and/or re-conditioned, in consultation with the Bland Shire Council, as stated in Section 4.6.3.

Number	Subject	Issue	Response
27	Flora and Fauna	Management measures for threatened flora species within the offset areas, including management of the Austral Pillwort.	The proposed management measures for the offset area would be detailed in the Offset Management Plan. As stated in the Statement of Commitments (Section 6) of the EA, these measures would include: • *revegetation planting;* • *regeneration of existing native vegetation communities;* • *exclusion of grazing to facilitate the regeneration of native vegetation;* • *weed and pest management;* • *soil erosion remediation;* • *selective use of native plant fertilizer;* • *a proposal (within the remnant) for ecological thinning of locked thicket regrowth to encourage plant succession and to create increased habitat heterogeneity;* • *fire management measures to include irregular mosaic burnings to maintain and/or increase habitat heterogeneity;* • *increasing nesting resources (nest boxes and logs available from vegetation clearance activities at the mine site);* • *habitat enhancement at the existing dam in the southern offset area;* • *provision for consultation with the DECC regarding the management of common invasive native birds (e.g. Noisy Miners and Kurrawongs);* • *re-introduction of species captured at the mine site (e.g. during vegetation clearance activities) within the southern offset area (e.g. frogs and smaller reptiles);* • *signage of the vegetation offset areas; and* • *monitoring the performance of the offset by suitably qualified person(s).* Many of these measures would be relevant to threatened flora species within the offset areas. For example, the northern offset area provides the opportunity to increase the area of Myall Woodland in the landscape through natural regeneration and revegetation. Further, large populations of the Austral Pillwort were recorded from gilgai within the northern offset area in 1998. In excess of 4,000 Austral Pillwort plants were recorded. Where monitoring shows that Austral Pillwort populations are being affected by heavy growth of grasses and other weeds, weed management measures would be implemented.
28	Flora and Fauna	The Offset Management Plan should be developed in consultation with the Department of Environment and Climate Change and other relevant parties that would be involved in the ongoing management of the offset areas.	Barrick has committed to preparing an Offset Management Plan, in the Statement of Commitments (Section 6 of the EA). Barrick would develop the Offset Management Plan in consultation with DWE and other relevant parties that would be involved in the ongoing management of the offset areas, as appropriate.

Number	Subject	Issue	Response
29	Road Transport	Concern regarding increased traffic, including concerns that some of the intersections along the existing and proposed access roads should be upgraded.	The E42 Modification is expected to generate about six additional truck movements per day on the existing access route. The additional employees would at most generate approximately 20 additional vehicles per day. The Road Transport Assessment, Appendix J of the EA, provides an assessment of the existing traffic conditions in the immediate CGM surrounds and the estimated increase in traffic generated as a result of the E42 Modification. The findings of the Road Transport Assessment are summarised in Section 4.10.2, as follows: ***Traffic Generation*** *…* *The additional traffic generated by the E42 Modification shown in Table 4-20 would be accommodated by the existing road network and would be imperceptible above the daily variations in existing traffic volumes (Appendix J).* *Assessment of the ratio of volume to capacity under each scenario (Table 4-21) shows that all roads proposed for access to the modified CGM would continue to operate at their existing Level of Service (i.e. Level of Service B) (Appendix J).* ***Peak Hour Intersection Performance*** *…* *With regard to traffic generation and peak hour intersection performance, no capacity improvements at intersections would be required (Appendix J).* ***Employee Shuttle Bus Service*** *The E42 Modification would be likely to increase the number of passengers using the existing employee shuttle bus service (i.e. the additional employees would use the employee shuttle buses instead of driving). If all the additional employees utilise the existing shuttle bus services there would be an almost negligible increase in external traffic (Appendix J).* ***Car Parking*** *Additional formal parking is not expected to be necessary given that additional personnel would be encouraged to use the shuttle bus service. Notwithstanding, there is potential within the approved CGM car park to accommodate any occasional overspill parking (Appendix J).* ***Road Safety*** *The increase in traffic volumes resulting from the E42 Modification would be minimal, and therefore no significant road safety issues are anticipated (Appendix J).* ***Transport of Hazardous Materials*** *The E42 Modification does not include any additional hazardous materials that would warrant inclusion in the THMS. Further, the modification would not require any changes to the routes used for the movement of vehicles carrying hazardous materials (currently included in THMS) to or from the E42 Modification.*

Number	Subject	Issue	Response
29 (Cont.)	Road Transport (Cont.)		With regard to road improvements (including intersection upgrades), the Road Transport Assessment provided the following conclusions, as stated in Section J5 of Appendix J: *…* • *This additional traffic would have minimal impact on approach routes to the modified CGM because the increase (even for maximum case) would remain within the capacity of the existing road network (including intersections).* • *Most of the additional employees are expected to use company employee shuttle buses for travel to and from work. Consequently the traffic generated by the E42 Modification is expected to be less than the maximum case assessment flows used as the basis of this assessment.* *It is the conclusion of this road transport assessment that the increased traffic generation resulting from the E42 Modification would be satisfactorily accommodated on the existing road network with no road improvements (including intersection upgrades) required as a result of this extra traffic.* Road transport mitigation and management measures are presented in Section 4.10.3 of the EA.
30	Road Transport	Concern that not all roads along the proposed access roads have been assessed, including Lake Cowal Road to the north of ML1535.	The Road Transport Assessment, Appendix J of the EA, provides an assessment of the existing traffic conditions in the immediate CGM surrounds and the estimated increase in traffic generated as a result of the E42 Modification. The E42 Modification is expected to generate about six additional truck movements per day on the existing access route. The additional employees would at most generate approximately 20 additional vehicles per day. The road transport assessment included assessment of the existing access route from West Wyalong, as well as two additional access routes proposed to be utilised by CGM personnel. These routes are described as the "*Forbes Access Route*" and "*Condobolin Access Route*". The roads along these routes are listed in Sections J2.1.2 and J2.1.3 of Appendix J, respectively, as follows: Forbes Access Route *Access from Forbes to the modified CGM (Figure J-2) would be via the Newell Highway, Carrawandool-Warroo Road, Bogies Island Road, Burcher Road, Wamboyne Dip Road, and Lake Cowal Road to the approved CGM entrance.* Condobolin Access Route *Access from Condobolin to the modified CGM (Figure J-2) would be via the West Wyalong-Condobolin Road, Burcher Road, Wamboyne Dip Road, and Lake Cowal Road to the approved CGM entrance.* The Road Transport Assessment provided the following conclusions, as stated in Section J5 of Appendix J: *…* • *This additional traffic would have minimal impact on approach routes to the modified CGM because the increase (even for maximum case) would remain within the capacity of the existing road network (including intersections).* • *Most of the additional employees are expected to use company employee shuttle buses for travel to and from work. Consequently the traffic generated by the E42 Modification is expected to be less than the maximum case assessment flows used as the basis of this assessment.* *It is the conclusion of this road transport assessment that the increased traffic generation resulting from the E42 Modification would be satisfactorily accommodated on the existing road network with no road improvements (including intersection upgrades) required as a result of this extra traffic.*

Number	Subject	Issue	Response
31	Road Transport	Application of an Infrastructure Levy for maintenance of the access road from Forbes to the mine.	The Road Transport Assessment, Appendix J of the EA, provides an assessment of the existing traffic conditions in the immediate CGM surrounds and the estimated increase in traffic generated as a result of the E42 Modification. The road transport assessment included assessment of the "*Forbes Access Route*" (via the Newell Highway, Carrawandool-Warroo Road, Bogies Island Road, Burcher Road, Wamboyne Dip Road, and Lake Cowal Road to the approved CGM entrance). Existing traffic data for the Forbes Access Route was obtained and supplemented with additional traffic count data where necessary. Figure J-4 of the Road Transport Assessment shows the location of traffic counts. The Road Transport Assessment included an assessment of the ratio of volume to capacity (at Level of Service B) of the existing road network. The assessment identified that all the roads within the study area road network (including those along the Forbes Access Route) currently operate at a Level of Service B. As stated in Section J4.3.2 of the Road Transport Assessment, even under the maximum case traffic assessment, all roads would continue to operate at their existing Level of Service (i.e. Level of Service B). As stated in Section J5 of Appendix J, the assessment concluded that: *…* • *This additional traffic would have minimal impact on approach routes to the modified CGM because the increase (even for maximum case) would remain within the capacity of the existing road network (including intersections).* • *Most of the additional employees are expected to use company employee shuttle buses for travel to and from work. Consequently the traffic generated by the E42 Modification is expected to be less than the maximum case assessment flows used as the basis of this assessment.* *It is the conclusion of this road transport assessment that the increased traffic generation resulting from the E42 Modification would be satisfactorily accommodated on the existing road network with no road improvements (including intersection upgrades) required as a result of this extra traffic.*
32	Ecologically Sustainable Development	Concern regarding application of the precautionary principle	With regard to the precautionary principle, Section 3.8.3 of the EA states: *Environmental assessment involves predicting what the environmental outcomes of a development are likely to be. The precautionary principle reinforces the need to take risk and uncertainty into account, especially in relation to threats of irreversible environmental damage.* *The EIS and Section 4 identify potential environmental impacts associated with the modified CGM, including long-term effects.* *As described in Section 3.2.3, a PHA, THMS and FHA have been completed for the approved CGM. The PHA identified scenarios that presented the highest risks to the environment, public safety and public property (North Limited, 1998). The FHA concluded that the CGM complied with the HIPAP No. 4 and HIPAP No. 6 Guidelines for tolerable fatality, injury, irritation and societal risk (Pinnacle Risk Management, 2004a). The FHA also concluded that the risks to the biophysical environment, the risk of propagation and the potential impact on cumulative risks in the area from releases were considered to be generally negligible (ibid.).* *The operation of the approved CGM has not resulted in incidents which required the consequence and likelihood ratings adopted for these risk-based assessments to be changed or revised. Put another way, performance of the approved CGM to date has revealed that its risk level is no greater than what was predicted and accepted as a result of relevant CGM approvals.*

Number	Subject	Issue	Response
32 (Cont.)	Ecologically Sustainable Development (Cont.)		*Overall, apart from the risk associated with the operation of the modified CGM saline groundwater supply borefield, the E42 Modification would not change the potential impact mechanisms previously identified and assessed for the approved CGM. The risk assessment conducted for the saline groundwater supply borefield (Section 4.15) indicated it would present low risk.* *Longer-term expected risks are considered by the specialist studies conducted in support of this EA (Section 1.7). Findings of these specialist assessments are presented in Section 4 and relevant appendices which include measures designed to mitigate potential environmental impacts arising from the modified CGM.* *An extensive range of measures have been adopted as components of the modified CGM design to minimise the potential for serious and/or irreversible damage to the environment. Additionally, environmental management and monitoring measures have been developed. On-going involvement of community, indigenous and environmental groups is proposed and an offset strategy would be implemented (Section 4).*
33	Community Consultation	Lack of community consultation, including lack of notice to allow interested parties to attend the public display and E42 Modification community information session.	The DGRs included consultation requirements as follows: *During the preparation of the Environmental Assessment, consultation must be undertaken with the relevant local, State or Commonwealth government authorities, service providers, community groups or affected landowners. In particular, consultation must be undertaken with:* • *Commonwealth Department of the Environment, Water, Heritage and the Arts (DEWHA);* • *NSW Department of Environment and Climate Change (DECC);* • *NSW Department of Water and Energy (DWE);* • *NSW Department of Primary Industries – Mineral Resources (DPI-MR);* • *NSW Roads and Traffic Authority (RTA);* • *Bland Shire Council (BSC); and* • *Community Environmental Monitoring and Consultative Committee (CEMCC).* Barrick fulfilled this consultation requirement. Public consultation undertaken during the preparation of the EA is detailed in Section 3.6.2 of the EA. In the EA, Barrick committed to continue consultation during the assessment of the EA and development of the E42 Modification. The EA was made publicly available from 22 August 2008 to 22 September 2008. During this period the EA was available for viewing during regular business hours at the following locations: • Department of Planning Information Centre, Sydney; • Barrick Australia Limited (CGM), West Wyalong; • Barrick Australia Limited (Perth Office), Perth; • Bland Shire Council, West Wyalong; • Forbes Shire Council, Forbes; • Lachlan Shire Council, Condobolin; and • NSW Nature Conservation Council, Sydney.

Number	Subject	Issue	Response
33 (Cont.)	Community Consultation (Cont.)		The EA was also available for download via the DoP's website and CD-ROM copies of the EA were available from the DoP upon request. The public availability of the EA was advertised by the DoP in the *West Wyalong Advocate* and *Sydney Morning Herald*. In addition, consultation undertaken by Barrick during the public exhibition period of the EA included: • communication with directly-affected landholders; • a public display at a shop front in Main Street West Wyalong on 11 September 2008; and • a community information session at the West Wyalong Services and Citizen's Club on 11 September 2008. The public display and community information session were advertised prior to 11 September 2008 in the following local/regional publications: *West Wyalong Advocate*; *The Condobolin Argus*; *The Lachlander*; and *The Forbes Advocate*. Barrick anticipates that the CEMCC will continue to be required for the modified CGM.
34	Community Consultation	Concern regarding the use of a message bank for the Community Complaints Line and lack of advertised contact details for making complaints.	In accordance with Development Consent Condition 10.1(a)(i), the community complaints line was established on 9 December 2003 and operates 24 hours per day. The community complaints line would be maintained for the modified CGM.
35	Community Consultation	Availability of CEMCC Minutes	Minutes of CEMCC meetings are made available for public inspection at Bland Shire Council within 14 days of the CEMCC meeting, in accordance with Development Consent Condition 8.7(ii)(e). Barrick anticipates this requirement to continue for the modified CGM.
36	Community Consultation	Availability of reports.	The requirements of the Development Consent regarding report availability have been set for the approved CGM. Management plans and AEMRs are made publicly available at Bland Shire Council in accordance with Development Consent Conditions 3.2 and 9.2(iii), respectively. The Independent Monitoring Panel's Annual State of the Environment Report for Lake Cowal is also made available at Bland Shire Council in accordance with Development Consent Condition 8.8(b)(ii). Barrick anticipates these requirements to continue for the modified CGM.
37	Community Consultation	Availability of data regarding native fauna deaths	The AEMR is required to include the results of fauna monitoring and records of any fauna/native fauna deaths or other incidents in accordance with Development Consent Conditions 3.4(a)(ii) and 9.2(i)(d). The AEMR is made publicly available at Bland Shire Council in accordance with Development Consent Condition and 9.2(iii). Regular information regarding monitoring results is also provided to the CEMCC in accordance with Development Consent Condition and 8.7(ii)(b). Barrick anticipates these requirements to continue for the modified CGM.

Number	Subject	Issue	Response
38	Geochemistry	Concern regarding increased risk of environmental exposure to heavy metals and other chemicals (including arsenic and cyanide) within tailings and waste rock.	A Tailings and Waste Rock Geochemical Assessment was undertaken for the E42 Modification and is included as Appendix C of the EA. With regard to waste rock from the modified pit, the assessment found that geochemical characteristics (including element enrichment and solubility) "*are expected to be similar to the characteristics of the waste rock from the approved CGM*". The Tailings and Waste Rock Geochemical Assessment also found that the "*results of the geochemical characterisation* [including element enrichment and solubility] *of discharge and deposited primary and oxide tailings confirm the findings from previous investigations*". The results of metal enrichment and solubility analyses undertaken previously for the CGM are summarised in Section C2.2 of Appendix C: *Elemental analyses carried out on selected samples for the EIS indicated that the oxide and primary waste rock is expected to have high concentrations of arsenic (As) (EGi, 1997). The EIS predicted high concentrations of As, boron (B), lead (Pb) and antimony (Sb) in the oxide tailings and silver (Ag), As, cadmium (Cd), molybdenum (Mo), Pb, sulphur (S), Sb and zinc (Zn) in the primary tailings. These elements were also found to be enriched in the waste rock and tailings samples from the confirmatory test work carried out by EGi in 2004 (EGi, 2004).* *The potential for release of environmentally important elements from waste rock and tailings was investigated in the 1995 and 1997 geochemical programs carried out by EGi. The results of single and sequential batch extractions of waste rock samples with deionised water indicated low water solubility for As under natural conditions of neutral or slightly alkaline pH. It was therefore concluded that leaching of environmentally important elements from waste rock at the approved CGM is unlikely to be of concern provided near neutral pH values are maintained.* *Column leach tests carried out on the oxide and primary tailings over a 20-week period also indicated an initial flush of soluble Cu and Zn from the oxide tailings and soluble copper (Cu) from the primary tailings (EGi, 1997). EGi concluded that this release is most likely associated with the residual cyanide in the tailings liquor and does not represent a long-term concern (EGi, 1997).* Tailings from the modified CGM would be stored in the same tailings storage facilities as for the approved CGM, with the same construction requirements for containment of tailings and limiting seepage. Waste rock from the modified CGM would be stored using the same methodology as for the approved CGM. As described in Section 2.4.3 of the EA, in accordance with the Environment Protection Licence (EPL) for the approved CGM, the modified waste emplacements would be located on a base drainage control zone with a minimum slope towards the open pit of 1(vertical [v]):200(horizontal [h]). Given the above, there would be no change to the potential risk associated with the approved CGM.

Number	Subject	Issue	Response
39	Other (Local Property Values)	Concerns were raised with respect to local property values.	Section 4 of the EA and the specialist appendices provide a detailed consideration of the potential environmental impacts of the E42 Modification and the proposed means of management and mitigation. The Visual Assessment was conducted to identify areas where potential visual impacts are most likely to occur as a result of the modified CGM and to assist in the mitigation of those impacts from sensitive viewpoints. The assessment process focussed on the potential visual impact that may result on views for the most sensitive visual settings/landuses where routinely accessed or readily accessible viewpoints exist. A summary of the Visual Assessment locations analysed is provided in Table 4-5 of Section 4 of the EA. Table 4-5 of Section 4 of the EA presents a summary of the Visual Assessment. The summary shows that nearby dwellings (i.e. "Gumbelah", "Coniston" and "Westlea" dwellings) would have a low potential impact after amelioration. Based on the assessment presented in the EA (including the proposed mitigation measures) it is considered that the E42 Modification impacts on visual amenity would have negligible effect on local property values for non-Barrick owned lands. Further, potential environmental impacts are considered from an economic perspective in Section H3.4 of Appendix H of the EA, as follows: *any environmental impacts from the E42 Modification, after mitigation by Barrick, would need to be valued at greater than $121M to make the E42 Modification questionable from an economic efficiency perspective.*
40	Other (Studies)	Requirement to update various environmental studies undertaken since the EIS, including studies associated with hydrology, earthquake science and climate change.	Where appropriate, assessments/studies were contemporised for the EA to account for the E42 Modification. As stated in Section 1.9 of the EA, specialist input for the EA was provided by the following specialists: • *CGM E42 Modification team (E42 Modification Description, Mitigation Measures and Environmental Management and Monitoring Programmes, Aboriginal Heritage, Rehabilitation and Landscape Management Strategy and Visual Assessment).* • *Coffey Geotechnics (Hydrogeological Assessment).* • *Gilbert and Associates (Hydrological Assessment).* • *Geo-Environmental Management (Tailings and Waste Rock Geochemical Assessment).* • *FloraSearch (Flora Assessment).* • *Western Research Institute (Fauna Assessment).* • *Heggies Australia (Noise and Blasting Assessment).* • *Holmes Air Sciences (Air Quality Assessment).* • *Gillespie Economics (Socio-Economic Assessment).* • *Masson Wilson Twiney (Road Transport Assessment).*
41	Other (Waste)	Concern regarding waste production.	Section 2.11 of the EA describes management of waste for the modified CGM.

Number	Subject	Issue	Response
42	Other (Changes in Detail)	Change in detail (regarding water supply) presented in the Preliminary Assessment compared to that presented in the EA.	The water supply description presented in the EA is considered to be consistent with the Preliminary Assessment which stated: *No change to the current water supply arrangements except where augmentation sources are identified as being available*. The internal and external water sources for the approved CGM are described in Section 2.7 of the EA. Additional potential external water supply sources are described in Section 2.7 of the EA: *In addition to the above external water supply sources, Barrick has identified additional potential sources which, upon further investigation, may augment the supply proposal. These options include:* • *development of additional borefields in other saline aquifers in the region;* • *the purchase of rights to existing licensed groundwater entitlements from the alluvial aquifer associated with the Lachlan River in an area disconnected from the Bland Creek Palaeochannel;* • *the purchase of additional Lachlan River surface water rights via purchase or trade of High Security and/or General Security water licences; and* • *development of a surface water collection system which could be installed using Barrick's harvestable water rights.* *Further investigation and feasibility assessments would be undertaken for these options. Relevant approvals would be obtained should these options be identified as feasible.*
43	Other (Monitoring of Heavy Metals in Water)	Concern regarding monitoring of heavy metals in water.	As stated in the Statement of Commitments (Section 6) of the EA, the programmes for surface water and groundwater monitoring are described in the Surface Water, Groundwater, Meteorological and Biological Monitoring Programme and would continue for the modified CGM. The surface water and groundwater monitoring aspects (including groundwater quality, surface water quality, Lake Cowal quality, Lake Cowal inflows quality and quality of the temporary pond [lake isolation system] and treated effluent holding tank) and monitoring sites are outlined in Table SOC-1 (Overview of the Environmental Monitoring Programme) of the Statement of Commitments (Section 6). The approved CGM surface water and groundwater monitoring programmes outlined in the Surface Water, Groundwater, Meteorological and Biological Monitoring Programme include monitoring of the following parameters: Fe, Ca, Mg, K, Na, Cl^-, SO_4^{2-}, Ag, As, Cd, Cu, Mn, Hg, Pb, Se, Sb and Zn. Molybdenum will also be included in groundwater and surface water monitoring programmes.
44	Other (Tree Planting)	CGM to pay local famers to plant trees.	Barrick is obligated to progressively revegetate the site as part of the rehabilitation programme for the mine. The Lake Cowal Foundation and/or Lachlan Catchment Management Authority are appropriate entities to coordinate catchment-wide revegetation initiatives.

Number	Subject	Issue	Response
45	Noise and Blasting	Concern that noise levels would be higher than those predicted in the Noise and Blasting Assessment. This includes concern that years other than those modelled (i.e. Years 7 and 9) will be noisier, and concern that increased infrastructure elevations were not considered in the noise modelling.	An acoustic model was developed as part of the Noise and Blasting Assessment, Appendix F of the EA. The acoustic model simulates the modified CGM components and noise source information (i.e. sound levels and locations). The CGM computer model was prepared using the NSW Road and Transport Authority's (RTA) Software's ENM (ENM for Windows, Version 3.06), a commercial software system developed in conjunction with the DECC. The acoustical algorithms utilised by this software have been endorsed by the Australian and New Zealand Environmental and Conservation Council (ANZECC) and all State Environmental Authorities throughout Australia as representing one of the most appropriate predictive methodologies currently available. The sources of noise identified for the modified CGM are outlined in Appendix F of the EA and include the general loading and operational fleet tailings embankment lift fleet. The model also considers meteorological effects, surrounding terrain, distance from source to receiver and noise attenuation (i.e. at-source mitigation measures adopted). Predictive noise emission modelling was undertaken for two representative periods in the modified CGM mine life, based on the provisional ore mining and processing schedule. The two representative periods (i.e. Years 7 and 9) were chosen on the basis that they would provide an estimation of the maximum noise emissions from the modified CGM for the nearest receptors. These two operational noise modelling scenarios also included all significant fixed plant and mobile equipment operating concurrently to simulate the likely intrusive $L_{Aeq(15minute)}$ emission levels. Inputs to the acoustic model included 3-dimensional characteristics (including height) of the proposed mine landforms during representative periods. At the heights used in the acoustic model, 'line of sight' would be available between the sources of noise (i.e. mining equipment on top of mining landforms) and receptors (i.e. nearby receptors). With line of site established, the relevant factor for determining maximum noise emissions for the nearest receptors becomes the number and type of mining equipment. Years 7 and 9 represent the maximum number/type of equipment to be used for the modified CGM.
46	Noise and Blasting	Concern regarding increase in noise, including night-time noise and sleep disruption (including noise from the mine site and traffic noise associated with heavy vehicle deliveries).	Potential on-site operational noise impacts and potential off-site road traffic noise impacts resulting from the E42 Modification are assessed in the Noise and Blasting Assessment, Appendix F of the EA, and are summarised in Section 4.8.2 of the EA. For the assessment of potential on-site operational noise, an acoustic model was developed that simulates the modified CGM components and noise source information (i.e. sound levels and locations), and also considers meteorological effects, surrounding terrain, distance from source to receiver and noise attenuation (i.e. at-source mitigation measures adopted). Predictive noise emission modelling was undertaken for two representative periods (i.e. Years 7 and 9). Table 4-15 of Section 4 of the EA identifies private (non-Barrick owned) dwellings where intrusive emissions are predicted to exceed the Project-specific noise assessment criteria during modified CGM operations. Predicted intrusive emissions for other privately-owned dwellings in the vicinity of the mine are tabulated in Appendix F of the EA. The private dwellings where noise emissions are predicted to be above Project-specific noise assessment criteria are divided into a noise management zone (1 to 5 A-weighted decibels [dBA] above Project-specific criteria) and a noise affectation zone (greater than 5 dBA above Project-specific criteria). Proposed noise management procedures for these zones are detailed in Section 4.8.2 of the EA:

Number	Subject	Issue	Response
46 (Cont.)	Noise and Blasting (Cont.)		*Noise Management Zone* *Depending on the degree of exceedance of the Project-specific criteria, potential noise impacts in the noise management zone could range from marginal to moderate (in terms of the perceived noise level increase). In addition to the noise mitigation measures included in the predictive modelling, noise management procedures would include:* • *Noise monitoring on-site and within the community.* • *Prompt response to any community issues of concern.* • *Refinement of on-site noise mitigation measures and operating procedures where practicable.* • *Implementation of reasonable and feasible acoustical mitigation at private dwellings (which may include measures such as enhanced glazing, insulation and/or air-conditioning) where noise monitoring shows noise levels from the mine which are 3 to 5 dBA above project-specific noise criteria.* *Noise Affectation Zone* *Exposure to noise levels greater than 5 dBA above Project-specific criteria may be considered unacceptable by some landowners. Management procedures for the noise affectation zone would include:* • *Discussions with relevant land owners to assess concerns and define responses.* • *Implementation of reasonable and feasible acoustical mitigation at private dwellings (which may include measures such as enhanced glazing, insulation and/or air-conditioning) where noise monitoring shows noise levels from the mine which are >5 dBA above project-specific noise criteria.* • *Negotiated agreements with land owners where required.* With regard to potential traffic noise, Section 4.8.2 of the EA states: *In accordance with the ECRTN (EPA, 1999), traffic associated with the development should not be permitted to lead to an increase in the existing noise traffic levels of more than 2 dBA where criteria are already exceeded. As a general rule, traffic noise associated with the modified CGM would not increase the existing traffic noise levels by more than 2 dBA, so long as the increase in light and heavy vehicle movements for the modified CGM is no greater than 60% (Appendix F).* … *Potential road traffic noise impacts have been considered for the collector and local roads presented in Section 4.10. Predicted noise levels on the Newell Highway and West Wyalong Condobolin Road, (arterial roads) have not been calculated given that the average daily percentage increase in light and heavy vehicles movements on these roads is predicted to be only 0.4% and 5%, respectively, and therefore not of a magnitude which would change the ambient road traffic noise levels discernible (i.e. the change would be less than 1 dBA) (Appendix F). Predictions were calculated using equations presented in Appendix F. These equations take into account various traffic characteristics, including traffic volume, vehicle speed and type, passby duration and location. The predicted peak $L_{Aeq(1hour)}$ noise levels are presented in Table 4-16. Existing noise levels for these roads are presented in Appendix F.* *The increases in noise levels arising from the E42 Modification during the daytime (morning and afternoon) and night-time peak hours are less than 2 dBA on all roads assessed (Appendix F).*

Number	Subject	Issue	Response
46 (Cont.)	Noise and Blasting (Cont.)		Traffic noise mitigation and management measures for the approved CGM are described in the TNMP. The mitigation and management measures described in the TNMP would not change as a result of the E42 Modification and would continue for the modified CGM. Additionally, Barrick (in consultation with the Bland Shire Council) has recently reduced access to an area previously used as a rest stop for truck delivery drivers near the entrance of the mine, to reduce potential traffic noise at the "Westlea" dwelling. The Noise and Blasting Assessment considers sleep disturbance criteria in the operational noise impact assessment, as stated in Section F4 of Appendix F: *The INP* [NSW Industrial Noise Policy] *does not specifically address sleep disturbance from high noise level events.* *The DECC use the ECRTN (EPA, 1999) sleep disturbance criterion of the $L_{A1(1minute)}$ not exceeding the $L_{A90(15minute)}$ by more than 15 dBA as a guide to identify the likelihood of sleep disturbance. This means that where the criterion is met, sleep disturbance is not likely, but where it is not met, a more detailed analysis is required.* *The DECC's interim "Sleep Disturbance Noise Criteria Guideline" (DEC 2004) indicates that the LA1(60second) level 15 dBA above the RBL* [Rating Background Level] *is a suitable screening criteria for sleep disturbance for the night-time period. In practice, sleep disturbance is assessed as the emergence of the $L_{A1(60second)}$ level above the $L_{A90(15minute)}$ prevailing at the time as described in the guideline and consistent with the DECC's ECRTN (EPA, 1999) Appendix B Section B5.* *The INP's more recent "Application Notes - NSW Industrial Noise Policy" (Application Notes) (EPA, 2006) indicates that a more detailed analysis should cover the maximum noise level or $L_{A1(1minute)}$, that is, the extent to which the maximum noise level exceeds the background level and the number of times this happens during the night-time period. Some guidance on possible impact is contained in the review of research results in the appendices to the ECRTN (EPA, 1999). Other factors that may be important in assessing the extent of impacts on sleep include:* • *How often high noise events will occur.* • *Time of day (normally between 2200 hours and 0700 hours).* • *Whether there are times of day when there is a clear change in the noise environment (such as during early morning shoulder periods).* *The $L_{A1(1minute)}$ descriptor is meant to represent a maximum noise level measured under "fast" time response. The DECC will accept analysis based on either $L_{A1(1minute)}$ or L_{Amax}. A review of noise events from the approved CGM night-time operations indicates that the maximum (L_{Amax}) levels are typically less than 10 dBA above the LAeq(15minute) intrusive level when measured at a distant receiver.* *Hence, if the $L_{Aeq(15minute)}$ criteria (ie background plus 5 dBA) are achieved then the DECC's sleep disturbance criteria would also be met. This relationship enables the noise assessment process to focus on the setting and impact assessment of INP-based intrusive noise and amenity levels which aim to minimise annoyance at noise sensitive receiver locations.* As described above, exposure to noise levels greater than 5 dBA above Project-specific criteria may be considered unacceptable by some landowners. Management procedures for private dwellings where noise emissions are predicted to be above Project-specific noise assessment criteria are detailed in Section 4.8.2 of the EA, as stated above.

Number	Subject	Issue	Response
47	Noise and Blasting	Concern regarding timing of noise monitoring.	The frequency/timing of noise monitoring for the approved CGM has been undertaken in accordance with the noise monitoring programme described in the Noise Management Plan. As stated in the Statement of Commitments (Section 6) of the EA, Barrick will implement the proposed revisions to the Noise Management Plan and will continue to implement components of the plan (including frequency/timing of noise monitoring) which remain unchanged.
48	Noise and Blasting	Concern that noise mitigation measures would not be implemented.	Noise mitigation measures would be implemented for the modified CGM as stated in the Statement of Commitments (Section 6 of the EA): *Noise mitigation and management measures are described in the NMP. The NMP describes:* • *relevant noise standards;* • *potential noise sources and impacts;* • *noise management and mitigation measures;* • *a noise monitoring programme;* • *provisions for the establishment of proactive and responsive noise management protocols; and* • *provisions for the establishment of community consultation protocols.* *The NMP will be revised to include additional noise monitoring locations (i.e. "Westlea" dwelling) and mitigation procedures, as described below.* *Noise Management Zone* *At private dwellings where noise emissions are predicted to be 1 to 5 A-weighted decibels (dBA) above Project-specific criteria (i.e. the "Noise Management Zone"), noise management procedures will include:* • *Noise monitoring on-site and within the community.* • *Prompt response to any community issues of concern.* • *Refinement of on-site noise mitigation measures and operating procedures where practicable.* • *Implementation of reasonable and feasible acoustical mitigation at private dwellings (which may include measures such as enhanced glazing, insulation and/or air-conditioning) where noise monitoring shows noise levels from the mine which are 3 to 5 dBA above Project-specific noise criteria.* *Noise Affectation Zone* *At private dwellings where noise emissions are predicted to be greater than 5 dBA above Project-specific criteria (i.e. the "Noise Affectation Zone"), noise management procedures will include:* • *Discussions with relevant land owners to assess concerns and define responses.* • *Implementation of reasonable and feasible acoustical mitigation at private dwellings (which may include measures such as enhanced glazing, insulation and/or air-conditioning) where noise monitoring shows noise levels from the mine which are >5 dBA above Project-specific noise criteria.* • *Negotiated agreements with land owners where required.* Barrick anticipates that the Minister for Planning would require the modified CGM to be carried out in accordance with the Statement of Commitments.

Number	Subject	Issue	Response
49	Noise and Blasting	Architectural treatments should be made available to private dwellings within the Noise Management Zone (i.e. 3 to 5 dBA above Project-specific noise criteria).	Acknowledged. As stated in the Statement of Commitments (Section 6 of the EA): *At private dwellings where noise emissions are predicted to be 1 to 5 A-weighted decibels (dBA) above Project-specific criteria (i.e. the "Noise Management Zone"), noise management procedures will include:* *…* • *Implementation of reasonable and feasible acoustical mitigation at private dwellings (which may include measures such as enhanced glazing, insulation and/or air-conditioning) where noise monitoring shows noise levels from the mine which are 3 to 5 dBA above Project-specific noise criteria.*
50	Noise and Blasting	Property acquisition rights should be made available to private dwellings within the Noise Affectation Zone.	Acknowledged. As stated in the Statement of Commitments (Section 6 of the EA): *At private dwellings where noise emissions are predicted to be greater than 5 dBA above Project-specific criteria (i.e. the "Noise Affectation Zone"), noise management procedures will include:* *…* • *Negotiated agreements with land owners where required.*
51	Noise and Blasting	Meteorological conditions applicable to noise emission limits.	The Noise Assessment, Appendix F of the EA, predicted noise emissions under strong inversion conditions (i.e. 8°C/100 m) with calm winds (i.e. 0 m/s), given that these are the prevailing meteorological conditions observed at the CGM. Barrick would therefore anticipate that these meteorological conditions be applied to the noise emission limits for the modified CGM, *viz.*: *The noise emission limits would apply under meteorological conditions of:* *(a) wind speed of up to 3 m/s at 10 m above the ground, or* *(b) temperature inversion conditions of up to 8°C/100 m and wind speed of 0.5 m/s at 10 m above the ground.*
52	Hydrogeology and Tailings Seepage	Concern regarding the drawdown resulting from extraction from the Bland Creek Palaeochannel via the water supply borefield.	As stated in Section 4.4 of the EA: *The E42 Modification would not change the current approved limits on the extraction of water from the CGM Bland Creek Palaeochannel Borefield, or the current system for managing groundwater levels around the CGM Bland Creek Palaeochannel Borefield.* These levels are stated in Table 1-1 of Section 1 of the EA as: • Maximum daily extraction of 15 megalitres per day (ML/day). • Maximum annual extraction of 3,650 megalitres (ML) per annum. • A total extraction of no more than 30,000 ML for the life of the mine. The groundwater level associated with the CGM Bland Creek Palaeochannel Borefield is monitored on a continuous basis at DWE's groundwater monitoring bore on Burcher Road (GW036553). Other DWE monitoring bores are located within the Bland Creek Palaeochannel. 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 relevant to the approved CGM were developed in consultation with the DWE and other water users within the Bland Creek Palaeochannel including stock and domestic users and irrigators. As stated in Section 2.7.1 of the EA: *the E42 Modification would not change these measures and they would be continued for the modified CGM.*

Number	Subject	Issue	Response
53	Hydrogeology and Tailings Seepage	Concern regarding potential increases in groundwater contamination, including: • contamination resulting from increased amount of tailings (including leaching of cyanide and cyanate and seepage exacerbated by existing drill holes beneath the tailings storage facilities); and • contamination resulting from a deeper open pit/final void (including risks to human health and the natural environment).	As stated in Section A7.1.2 of the Hydrogeological and Tailings Seepage Assessment (Appendix A of the EA), Special Condition E3 of the approved CGM EPL required demonstration of compliance with the level of permeability specified in the EPL for the floors of the tailings storage facilities prior to their operational use. The specified requirement is for basal barrier or impermeable liner with equivalent permeability not greater than 10^{-9} metres per second (m/s) over a thickness of at least 1 m. Field investigations and laboratory testing of the permeabilities of the tailings storage facilities was undertaken by URS Australia Pty Ltd. As stated in the Hydrogeological and Tailings Seepage Assessment: *URS Australia Pty Limited conducted field investigations and laboratory testing for both the northern and southern tailings storage facilities. In summary they concluded (URS-NTSF 2005 and URS-STSF 2006) that:* • *investigations consistently showed the uppermost 5 m of the tailings storage facilities footprints to be essentially clay soils of extremely low permeability; laboratory testing of typical samples from within 5 m of floor level yielded permeabilities less than the target permeability of 10^{-9}m/s; and* • *inspections of cut-off trench excavation[1] and storage floor did not reveal any significant extensive or continuous zones or lenses of high permeability soil that might provide a leakage path.* *URS concluded that the floor of the approved CGM tailings storage facilities met the NSW Environmental Protection Agency's (EPA's) permeability requirements, and accordingly Special Condition E3 of the EPL was removed.* *[1] Coffey understands that a cut-off trench to provide security against shallow lateral migration of tailings water beneath the embankment was constructed beneath the starter embankment of the tailings storage facilities to a nominal 2.5m below original surface level. The floor of the cut-off trench was inspected to confirm that it consisted of low permeability clay (and further excavation of any areas where this was not the case), prior to backfilling of the cut-off trench with compacted and moisture-conditioned low permeability clay (URS Australia Pty Limited, pers. comm. 9 March 2007).* The freeboard (i.e. extra embankment height) of the tailings storage facilities is described in Section 2.6.3 of the EA: *The approved CGM tailings storage facilities have been designed with sufficient freeboard to store water from a 1 in 1,000 average recurrence interval (ARI) rainfall event. The required free-board is maintained as the storage fills with tailings via a series of embankment lifts.* Further, the tailings storage facilities have been constructed in accordance with the requirements of the NSW Dam Safety Committee, as required by Development Consent Conditions 4.2(c)(i) and 5.2(a). Potential increases in groundwater contamination associated with tailings seepage and the final void are assessed in the Hydrogeological and Tailings Seepage Assessment, and are summarised in Section 4.4.2 of the EA. With regard to groundwater contamination associated with tailings seepage, Section 4.4.2 of the EA states: *The increase in elevation in the northern and southern tailings storage facilities would increase the head of water in the tailings storage facilities, thereby increasing the pressure on the underlying material (Appendix A). Notwithstanding, tailings permeability would tend to reduce following consolidation (ibid.). As the tailings consolidate, the thickness of low permeability consolidated tailings material would increase (ibid.). This would increase the thickness of low permeability consolidated tailings at the base of the tailings storage facilities (ibid.).*

Number	Subject	Issue	Response
53 (Cont.)	Hydrogeology and Tailings Seepage		*Seepage from the tailings storage facilities to the underlying aquifers would be expected to ultimately migrate slowly toward the modified CGM open pit via flows through the uppermost saline alluvial aquifer (Appendix A), as predicted in the EIS. Barrick is the only known user of this aquifer, and hence no seepage impacts to other users have been predicted to occur (ibid.).* *…* *Observations to date, together with the construction methodology implemented for the tailings storage facilities and the predicted geochemistry of CGM tailings (i.e. similar to the predicted geochemistry described in the EIS [Appendix C]) indicate that the E42 Modification would not significantly change EIS predictions for solute transport in seepage from the tailings storage facilities described in Section 4.4.1 (Appendix A).* With regard to groundwater contamination associated with the final void, Section 4.4.2 of the EA states: *Whilst the E42 Modification would increase the area and depth of the final void, it would not change the depth of the relatively impermeable clay that separates the Lake Cowal bed from the saline aquifer system (Appendix A).* *Piezometric response in the saline alluvial aquifers has been small and localised, consistent with low vertical and horizontal permeability, and inflows to the open pit have been small compared with the inflows predicted in the EIS.* *On this basis, the E42 Modification would not change the disconnectivity between Lake Cowal and the open pit as described in the EIS (Appendix A).*
54	Hydrogeology and Tailings Seepage	Concern regarding the lining of the tailings storage facilities.	As stated in Section A7.1.2 of the Hydrogeological and Tailings Seepage Assessment (Appendix A of the EA), Special Condition E3 of the approved CGM EPL required demonstration of compliance with the level of permeability specified in the EPL for the floors of the tailings storage facilities prior to their operational use. The specified requirement is for basal barrier or impermeable liner with equivalent permeability not greater than 10^{-9} metres per second (m/s) over a thickness of at least 1 m. Field investigations and laboratory testing of the permeabilities of the tailings storage facilities was undertaken by URS Australia Pty Ltd. As stated in the Hydrogeological and Tailings Seepage Assessment: *URS Australia Pty Limited conducted field investigations and laboratory testing for both the northern and southern tailings storage facilities. In summary they concluded (URS-NTSF 2005 and URS-STSF 2006) that:* • *investigations consistently showed the uppermost 5 m of the tailings storage facilities footprints to be essentially clay soils of extremely low permeability;* • *laboratory testing of typical samples from within 5 m of floor level yielded permeabilities less than the target permeability of 10^{-9}m/s; and* • *inspections of cut-off trench excavation[1] and storage floor did not reveal any significant extensive or continuous zones or lenses of high permeability soil that might provide a leakage path.* *URS concluded that the floor of the approved CGM tailings storage facilities met the nsw Environmental Protection Agency's (EPA's) permeability requirements, and accordingly Special Condition E3 of the EPL was removed.* *[1] Coffey understands that a cut-off trench to provide security against shallow lateral migration of tailings water beneath the embankment was constructed beneath the starter embankment of the tailings storage facilities to a nominal 2.5m below original surface level. The floor of the cut-off trench was inspected to confirm that it consisted of low permeability clay (and further excavation of any areas where this was not the case), prior to backfilling of the cut-off trench with compacted and moisture-conditioned low permeability clay (URS Australia Pty Limited, pers. comm. 9 March 2007).*

Number	Subject	Issue	Response
55	Hydrogeology and Tailings Seepage	Concern regarding connection between the fractured bedrock aquifer and the Bland Creek Palaeochannel.	As described in Section A3.6 of the Hydrogeological and Tailings Seepage Assessment, Appendix A of the EA, groundwater resources within the region are generally associated with two geological formations: • the Lachlan Formation (Bland Creek Palaeochannel), which comprises an aquifer of quartz gravel with groundwater of generally low salinity; and • the Cowra Formation, which comprises aquifers of isolated sand and gravel lenses in predominantly silt and clay alluvial deposits, with perched groundwater of generally higher salinity. Locally, four saline aquifers have been identified within ML 1535, as described in Appendix A of the EA: • two alluvial saline aquifers at varying depths within the alluvium of the Quaternary-aged Cowra Formation; • a local saline aquifer in an alluvial deposit (Groundwater Consulting Services [GCS], 2008) occurring in the upper part of the profile likely to be a part of the Cowra Formation discussed above; and • a saline alluvial aquifer that occurs in weathered fractured rock below the Cowra Formation (this aquifer is not part of the Cowra Formation or the Bland Creek Palaeochannel). A saline, deeper fractured bedrock aquifer was also identified and recommended for further drilling in the Saline Groundwater Assessment – Saline Alluvial Aquifer, Attachment AA of Appendix A. This aquifer is not a component of the water supply sources for the E42 Modification proposal. As described in Sections 2.7 and 2.8.5 of the EA, groundwater extraction for the modified CGM is proposed from the above four local saline aquifers for open pit dewatering and/or water supply. The hydraulic relationships between the four local saline aquifers and the Bland Creek Palaeochannel are described in Appendix A of the EA and are summarised in Section 4.4 of the EA. Appendix A of the EA provides an assessment of the predicted drawdown in geological formations/aquifers where there is potential connectivity associated with proposed groundwater extractions for the E42 Modification. Appendix A therefore included assessment of potential connectivity between: open pit dewatering and the Bland Creek Palaeochannel; and the saline alluvial aquifer (associated with the saline groundwater supply borefield) and the Bland Creek Palaeochannel. With regard to potential connectivity between open pit dewatering (which intersects the three saline aquifers within the Cowra Formation) and the Bland Creek Palaeochannel, Section 4.4.1 of the EA describes that monitoring undertaken for the approved CGM shows that bores located further than 700 m from the open pit generally displayed only minor standing water level changes (i.e. less than 20 cm) over the period July 2004 to December 2007. These variations are typical of natural effects and a muted response to rainfall trends. Based on the above and similar records from other bores further from the open pit, it would appear that there has not been any regional impact to date from open pit dewatering (i.e. no demonstrated connectivity between the three saline aquifers within the Cowra Formation and the Bland Creek Palaeochannel). The potential connectivity between the saline alluvial aquifer (associated with the saline groundwater supply borefield) and the Bland Creek Palaeochannel was also assessed in Appendix A of the EA. As summarised in Section 4.4.2 of the EA, the Bland Creek Palaeochannel occurs some 10 km east of the approved CGM and is hydraulically well separated from the open pit dewatering borefield and saline groundwater supply borefield. Due to this separation and the relatively small rate of dewatering from the open pit and saline groundwater supply borefield (i.e. both approximately 1 ML/day), no regional groundwater drawdown impacts on the Lachlan Formation (i.e. Bland Creek Palaeochannel) are anticipated as a result of the E42 Modification open pit dewatering. In summary, there is no evidence to date of any connection between the saline deeper fractured bedrock aquifer and the Bland Creek Palaeochannel and there is no evidence to suggest that a connection would develop over time.

Number	Subject	Issue	Response
56	Hydrogeology and Tailings Seepage	No mention of the groundwater mound beneath the Jemalong-Wyldes Plains Irrigation District.	The groundwater mound beneath the Jemalong-Wyldes Plains Irrigation District was described in the EIS as follows: "*A significant groundwater mound in the shallow alluvial sequences has developed around the Warroo Prior Stream along which has been constructed a major irrigation supply channel*". DWE groundwater level monitoring records indicate that the groundwater mound beneath the Jemalong-Wyldes Plains Irrigation District no longer exists. This is likely to be due to the prolonged drought in the region and the significant reduction in irrigation within the Jemalong-Wyldes Plains Irrigation District. The DWE should be contacted for further information regarding the groundwater mound beneath the Jemalong-Wyldes Plains Irrigation District.
57	Regional Economy	Concern regarding the potential social impact at the end of the mine life.	The potential social impacts at the end of mine life are addressed in Section 4.13.4 of the EA, as follows: *The construction and operation of the CGM has stimulated demand in the regional economy, leading to increased business turnover in a range of sectors and increased employment opportunities. Cessation of the modified CGM would lead to a reduction in economic activity in the Lachlan region.* *The socio-economic significance of cessation of the modified CGM would depend on the relative significance of the mine to the regional economy and other regional economic factors at the time. Impacts associated with cessation are likely to be greater in a declining economy than in a growing diversified economy.* *The magnitude of the regional economic impacts of cessation of the CGM would largely depend on whether affected workers and families leave the region. Minimisation of the impacts for the regional economy associated with mine cessation can occur through the retention of displaced workers within the region, even if they remain unemployed. This is because continued expenditure by the unemployed who stay in the region would contribute to the final demand. Additional economic activities or developments would also assist in enticing displaced workers to remain in the region.* *In accordance with the MREMP described in Section 3, Barrick would develop a final MOP in consultation with regulatory agencies and would include consideration of the potential impacts of reductions in employment that would occur at the end of mine life.*
58	Regional Economy	Concern regarding the lack of benefits to West Wyalong.	As stated in Section H5 of the Socio-Economic Assessment, Appendix H of the EA: *the annual regional economic impacts associated with the peak year of the E42 Modification are estimated at up to:* • *$292M in annual direct and indirect regional output or business turnover;* • *$114M in annual direct and indirect regional value added;* • *$59M in annual household income; and* • *868 direct and indirect jobs.* The annual regional economic impacts of the modified CGM would be distributed throughout the region, including West Wyalong. It is also noted that many submissions were received which refer to the positive benefits to Bland Shire and West Wyalong in particular, including submissions from the Bland Shire Council and several West Wyalong business owners.

Number	Subject	Issue	Response
59	Regional Economy	Concern regarding the uncosted incremental environmental impact.	The Socio-Economic Assessment, Appendix H of the EA, considers the economic efficiency of the E42 Modification (i.e. consideration of economic costs and benefits). In a simple framework, the benefits to society from mining relate to the net production benefits, while the economic costs to society relate to any environmental impacts. Because the potential incremental environmental impacts of the modification have not been valued, the net production benefit of $121 million (M) represents a threshold value. As stated in the Section H3.4 of the Socio-Economic Assessment: *This threshold value is the opportunity cost to society of not proceeding with the E42 Modification. Interpreted another way, any environmental impacts from the E42 Modification, after mitigation by Barrick, would need to be valued at greater than $121M to make the E42 Modification questionable from an economic efficiency perspective.* *To put this into a regional context, this is equivalent to each household in the Lachlan SSD having a willingness to pay of over $5,800 to avoid any of the residual environmental impacts of E42 Modification, after mitigation by Barrick. The equivalent figure for NSW households is $48. In the context of the economic valuation literature, these are very large threshold values.*
60	Regional Economy	Concern that the existence of the mine makes it more difficult for farmers to source workers (i.e. farmers cannot compete with mining pay rates).	As described in the Socio-Economic Assessment, Appendix H of the EA, while the modified CGM would continue to provide employment for approximately 320 personnel that work at the mine (370 in peak periods), it would also result in an average of 30 additional jobs (80 in peak periods). Barrick estimate that the majority of these workers (90%) will come from the region, with 60% from the Bland Shire. As discussed in Section H5 of the Socio-Economic Assessment, Appendix H of the EA, the annual regional economic impacts associated with the peak year of the E42 Modification are estimated to include up to 868 direct and indirect jobs. Further, as stated in Section H6 of the Socio-Economic Assessment, Appendix H of the EA, *Whether local labour is sourced from the unemployment pool or from other industries, it can reduce unemployment levels – directly in the case of employing unemployed people and indirectly via the filter effect[1] where labour is sourced from other industries.* *[1] The filter effect refers to the situation where labour is sourced from other industries in the region making jobs available in those industries which are subsequently filled by people either from the unemployment pool or other industries with the latter making jobs available in that industry, etc.* Barrick considers that the E42 Modification provides the opportunity to realise significant social and economic benefits, stimulating regional economic activity through the 11 year mine life increase and the continued employment opportunities for the current 320 personnel and additional 30 personnel.

Number	Subject	Issue	Response
61	Regional Economy	Concern regarding social infrastructure impacts.	Barrick understands that changes in the workforce and population of a region may have implications in relation to access to community infrastructure and human services, which includes for example housing, health and education facilities. This may include the number of services that are available to be used and the accessibility of the population to these services. A community infrastructure assessment was included in the Socio-Economic Assessment (Appendix H of the EA) to consider these issues and is summarised in Section 4.14 of the EA. The Socio-Economic Assessment considered the total population change resulting from the E42 Modification within the context of recent population changes to the Lachlan Statistical Sub-division (SSD) region and in particular the West Wyalong region (i.e. the Bland Statistical Local Area [SLA]). As stated in Section 4.14.1 of the EA: *This population increase is equivalent to between one and three year's recent population loss from the Bland SLA* [Statistical Local Area] *and less than a third of a year's population loss from the wider Lachlan SSD* [Statistical Sub-division]*. This recent decline is likely to have resulted in spare capacity in community infrastructure and services. Consequently, the additional population for the region as a result of the E42 Modification is unlikely to place any strain on existing community infrastructure (Appendix H).* Barrick has also contributed to local infrastructure in partnership with Bland Shire Council, and also supports projects in Lachlan and Forbes Shires. For example, Barrick contributed $100,000 towards Bland Childcare Services for the construction of an expanded facility in West Wyalong that now provides pre-school, family daycare, a toy library and vacation care services to working families in West Wyalong. Additionally the Bland Shire Council directs Barrick's rates into a Special Community Reserve Fund which has been established to improve local infrastructure. Bland Shire Council has recently used some of these funds to undertake major improvements to local recreation grounds.
62	Aboriginal Cultural Heritage	Concern regarding resolution of the Native Title claim/s and availability of documents associated with the Native Title Agreement.	Barrick consulted with the Registered Native Title Claimants regarding the CGM, culminating in the Ancillary Agreement (the Ancillary Deed). Barrick has operated, and continues to operate, the CGM in accordance with its requirements under the Ancillary Deed and the Indigenous and Aboriginal Cultural Heritage Management Plan (IACHMP).
63	Aboriginal Cultural Heritage	Concern regarding the potential impact on land and waters containing Aboriginal cultural heritage values.	As described in Section 4.11.2 of the EA, of the 20 registered Aboriginal heritage sites within ML 1535, sites B, C and LC2 would be disturbed for the E42 Modification. Sites B and C would be permanently covered by the northern waste emplacement. Site LC2 may be partially disturbed/covered by the northern waste emplacement and/or disturbed by proposed water management works associated with the UCDS. As stated in Section 4.11.3 of the EA, Barrick and its consultant archaeologists have obtained permits and consents under Section 87 and Section 90 respectively of the *National Parks and Wildlife Act, 1974* (NPW Act) for the management of Aboriginal objects at the approved CGM. The management and mitigation measures described in the EA for future works at sites B, C and LC2 are consistent with the requirements of the Section 87 permits and Section 90 consents. In addition, feedback received during consultation from representatives of the Aboriginal groups was considered during the development of the future management and mitigation measures described for future works at sites B, C and LC2.

Number	Subject	Issue	Response
64	Aboriginal Cultural Heritage	Concern regarding Wiradjuri benefits from the mine.	Barrick considers that the CGM provides many and varied benefits to the Wiradjuri. The Wiradjuri Condobolin Corporation (WCC), other Wiradjuri groups and the wider Wiradjuri community receive benefits through the Ancillary Deed for the CGM. In accordance with the Ancillary Deed, Barrick provide annual funding to the WCC (for use within the Wiradjuri Study Centre, Wiradjuri Council of Elders and Yalbalingada Christian Development Centre) and the Wiradjuri Condobolin Culture and Heritage Company for Women's Issues. Barrick engages with the Wiradjuri Condobolin communities through a number of formal committees and meets regularly to develop business, employment, training and further education opportunities. The WCC are also recognised in the Section 87 permits and Section 90 consents issued under the NPW Act, through which they are invited to observe and where appropriate participate in activities such as recording and collection works. For example, Barrick employed the WCC to manage Wiradjuri cultural heritage activities during mine construction. During that period, up to 60 Wiradjuri cultural heritage field officers and archaeologists were employed to identify and collect artifacts found at the site. Many Wiradjuri people continue to be employed in part-time and full-time positions at the mine, including supervision of cultural heritage activities on site. The WCC also facilitates a Cultural Heritage Induction course for new Barrick employees. Further, the approved CGM has provided, and continues to provide, study and training opportunities for Wiradjuri people. To date, seven university scholarships and four trade apprenticeships have been awarded to young Wiradjuri people in mining-related studies and trades. Two of the scholarship holders completed undergraduate studies and one apprenticeship was completed in 2007. In a media release, Mr Percy Knight, Chief Executive Officer of the WCC, stated: *Many Wiradjuri people have been employed in full-time, responsible jobs. They also supervise cultural heritage activities on site. Young Wiradjuri people are provided an opportunity to study at university, while yet others take apprenticeships. These young people are our future leaders. They now have an opportunity that wasn't there before the Barrick mine.* Many and varied benefits to the Wiradjuri people would continue for the modified CGM.
65	Aboriginal Cultural Heritage	Concern regarding availability/access to: • ML 1535; • Land held by Barrick at and in the vicinity of Lake Cowal that contains Aboriginal sites and places; • the inventory (including current location) of Aboriginal objects found within the ML; and • various archaeological reports previously undertaken for the approved CGM.	Relevant Aboriginal groups were invited to a consultation meeting about the E42 Modification in June 2008. West Wyalong Local Aboriginal Land Council, Condobolin Local Aboriginal Land Council and Mooka Traditional Owners Council attended the June 2008 information session. In response to requests during this meeting, representatives from West Wyalong Local Aboriginal Land Council, Condobolin Local Aboriginal Land Council and Mooka Traditional Owners Council also visited the approved CGM to view the sites proposed for disturbance. Feedback received during consultation from representatives of the Aboriginal groups was considered during the development of the future management and mitigation measures described in Section 4.11.3 of the EA. The IACHMP contains an inventory (including current locations) of Aboriginal objects found within the ML. The IACHMP includes detailed descriptions of the sites proposed to be disturbed for the E42 Modification (i.e. sites B, C and LC2). The IACHMP is publicly available at the Bland Shire Council. Reports/assessments included in the EIS and EA have also been made publicly available.

Number	Subject	Issue	Response
65 (Cont.)	Aboriginal Cultural Heritage		Consultation with Aboriginal groups regarding the E42 Modification is described in Section 3.6.2 of the EA and is considered to be consistent with the guiding principles for Aboriginal cultural heritage assessment and consultation of the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation, 2005), which states: *The objective of the assessment process is to provide information to enable decision makers to ensure that development have considered the following:* • *…information regarding the significance to those Aboriginal people with a cultural association with the land of any Aboriginal cultural heritage values on which the proposed activity is likely to have an impact;* • *the views of those Aboriginal people regarding the likely impact of the proposal on their Aboriginal cultural heritage…* Availability/access to the relevant Aboriginal sites, objects and places and inventories and reports about those sites, objects and places is governed by the conditions of the permits and consents. With regard to future works at sites B and C, the Statement of Commitments (Section 6) of the EA states that inspection, salvage and collection works will be undertaken at each site by the permit holder or delegate in accordance with the procedure contained in Special Condition 6 of the permit. The opportunity for the Aboriginal community to access these sites and participate in recording and collection works is stated in Special Condition 6 of the permit, as follows: *…A permit holder and/or his instructed delegates shall inspect the land in these site locations and identify surface Aboriginal objects. The Wiradjuri Condobolin Corporation, West Wyalong Local Aboriginal Land Council and Mooka Traditional Owners Council (hereafter the "Aboriginal community") shall be notified of the programme and a representative/s shall be invited to observe and where appropriate participate in recording and collection works…* With regard to future works at site LC2, the Statement of Commitments (Section 6) of the EA states that collected objects will be replaced in a location as close as possible to their original location at a time when the works within the specific area do not pose a future threat to them. The opportunity for the Aboriginal community to access this site and participate in replacement works is stated in Special Condition 6 of the permit, as follows: *…The Aboriginal community shall be notified of the programme and a representative/s shall be invited to observe and where appropriate participate in replacement works…* The access arrangements for the Keeping Place, including access for the Aboriginal community, are described in Special Condition 13 of the permit, as follows: *…Keys shall be held by the Cowal Gold Project Site Coordinator and access shall be limited to Aboriginal Community representatives, the permit holders and/or their instructed delegates, the Land, Environment and Wiradjuri Heritage Officer and for audit purposes, Department of Environment and Conservation, Cultural Heritage Branch staff…* Special Condition 15 of the permit describes the availability requirements of the final report detailing the results of investigations (within 9 months of the completion of the excavations and field investigations), as follows: *…The holder/s of the permit shall furnish the Department of Environment and Conservation, Cultural Heritage Branch with a final report detailing the results of investigations within 9 months of the completion of the excavations and field investigations…A separate plain English report shall also be produced for the Aboriginal community within the same timeframe.*

Number	Subject	Issue	Response
65 (Cont.)	Aboriginal Cultural Heritage		General Term/Condition 6 of the permit describes access arrangements for the DECC (including access to the master inventory), as follows: *An officer of the* [National Parks and Wildlife Service]*, acting on the authority of the Director-General, may at any time examine work done or any objects recovered under any Permit or Consent.* The abovementioned permit conditions regarding access will continue and will apply to the modified CGM.
66	Aboriginal Cultural Heritage	Concern regarding the adequacy of the assessment of Aboriginal cultural heritage undertaken for the EA. This includes concern that Aboriginal sites and artefacts have been missed by previous surveys.	More than five archaeological surveys and assessments have been conducted in the vicinity of the approved CGM at various times between 1989 and 2003. As stated in Section 4.11.1 of the EA: *Preliminary archaeological inspections were made at Lake Cowal in 1989 by Paton (Paton, 1989). In 1995 project feasibility studies were approved and detailed archaeological surveys along the lake shore and in the vicinity of the approved CGM were conducted by Scott Cane and Roley Williams (Wiradjuri Regional Aboriginal Land Council) (Cane, 1995a). Subsequent development planning led to another archaeological survey of a possible access road, a water pipeline and a transmission line for the proposed mine (Huys and Johnston, 1995). A further archaeological investigation was conducted in the area west of the Lake later that year by Scott Cane assisted by Roley Williams (Wiradjuri Regional Aboriginal Land Council) and a member of the West Wyalong Aboriginal community (Cane, 1995b).* *In 1995, another archaeological survey of new locations for tailings storage facilities, part of the water pipeline, a small road realignment and a new ETL route to the south of the lake was undertaken (Nicholson, 1997).* *A number of further surveys conducted by archaeologists Dr Colin Pardoe, Dr Johan Kamminga, emeritus Professor Jim Allen, emeritus Professor Richard Wright, Dr Peter Hiscock, Dr Sally Brockwell, Mr David Johnston and Mr Francis Shawcross have also been undertaken since 2001 in consultation with Aboriginal representatives.* Summaries of the survey results and the registered Aboriginal sites identified are outlined in the IACHMP (Barrick, 2003). Aboriginal heritage sites which occur within ML 1535 and have been registered with the DECC include sites P1, P2, LC1-LC4 and exposures A-N. The majority of registered sites within ML 1535 are open scatters with concentrations of quartz flakes. The recorded artefacts associated with these sites include quartz flakes, backed blades and axes. Where relevant, a representative sample of Aboriginal objects has been collected from these sites in accordance with the permits and consents. The registered Aboriginal cultural heritage sites relevant to the approved CGM are identified on Figure 4-20, Section 4 of the EA.

Number	Subject	Issue	Response
67	Aboriginal Cultural Heritage	Concern regarding the level of consultation with the Aboriginal community, including consultation associated with: • methods used to record and store collected artefacts; • the *Indigenous Archaeology and Cultural Heritage Management Plan*; • the regional cultural heritage study.	Consultation with Aboriginal groups about the approved CGM has been extensive and involved various methods including advertisements, meetings, correspondence and archaeological survey attendance prior to the commencement of, and during, the operation of the approved CGM. Consultation with Aboriginal groups regarding the E42 Modification is described in Section 3.6.2 of the EA and is considered to be consistent with the guiding principles for Aboriginal cultural heritage assessment and consultation of the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation, 2005), which states: *The objective of the assessment process is to provide information to enable decision makers to ensure that development have considered the following:* • *…information regarding the significance to those Aboriginal people with a cultural association with the land of any Aboriginal cultural heritage values on which the proposed activity is likely to have an impact;* • *the views of those Aboriginal people regarding the likely impact of the proposal on their Aboriginal cultural heritage…* Consultation regarding the methods used to record and store collected artefacts have been conducted in accordance with the Section 87 permits and Section 90 consents. Consultation regarding the IACHMP has been undertaken in accordance with Condition 3.3(a)(ii) of the Development Consent. Barrick has provided a financial contribution to the WCC for the purpose of funding a regional cultural heritage study, fulfilling Barrick's obligation under Condition 9 of Consent 1467.
68	Aboriginal Cultural Heritage	Concern regarding the proposed impact to previously identified Aboriginal cultural heritage sites.	As stated in Section 4.11.3 of the EA, Barrick and its consultant archaeologists have obtained permits and consents under Section 87 and Section 90 respectively of the NPW Act for the management of Aboriginal objects at the approved CGM. The management and mitigation measures described in the EA for future works at sites B, C and LC2 are consistent with the requirements of the Section 87 permits and Section 90 consents. In addition, feedback received during consultation from representatives of the Aboriginal groups was considered during the development of the future management and mitigation measures described for future works at sites B, C and LC2.

Number	Subject	Issue	Response
69	Aboriginal Cultural Heritage	Concern that the consultation has not been undertaken with all appropriate representatives of the Wiradjuri community. Comment that the Wiradjuri Regional Aboriginal Land Council no longer exists.	Consultation with Aboriginal groups regarding the E42 Modification is described in Section 3.6.2 of the EA and is considered to be consistent with the guiding principles for Aboriginal cultural heritage assessment and consultation of the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation, 2005), which states: *The objective of the assessment process is to provide information to enable decision makers to ensure that development have considered the following:* • *…information regarding the significance to those Aboriginal people with a cultural association with the land of any Aboriginal cultural heritage values on which the proposed activity is likely to have an impact;* • *the views of those Aboriginal people regarding the likely impact of the proposal on their Aboriginal cultural heritage…* Consultation with Aboriginal groups regarding the E42 Modification is described in Section 3.6.2 of the EA. Consultation was undertaken via letters and an information session in June 2008. As stated in Section 3.6.2: *The following groups were invited to attend the information session and to provide any comments on these matters to Barrick:* • *Wiradjuri Condobolin Corporation;* • *Wiradjuri Council of Elders;* • *West Wyalong Local Aboriginal Land Council;* • *Condobolin Local Aboriginal Land Council;* • *Mooka Traditional Owners Council;* • *NSW Aboriginal Land Council;* • *BSC;* • *DECC; and* • *Native Title Services.* The abovementioned Aboriginal groups were considered to be the appropriate groups to consult with regarding the E42 Modification, having regard to the historical association of Aboriginal groups and the approved CGM, including the history of the consultation required for the cultural heritage permits and consents issued for the approved CGM. The EA describes the Wiradjuri Regional Aboriginal Land Council as one of the groups consulted about the approved CGM. Barrick acknowledge that the Wiradjuri Regional Aboriginal Land Council no longer exists.

Number	Subject	Issue	Response
70	Aboriginal Cultural Heritage	Concern regarding decision-making process for implementation of mitigation measures and management of Aboriginal objects.	Barrick and its consultant archaeologists hold Permits 1468 and 1681 and Consents 1467 and 1680 issued by the Director-General of Department of Environment and Conservation/National Parks and Wildlife in 2002/2003. Barrick are bound by the conditions included in the permits and consents. As stated in the Statement of Commitments (Section 6) of the EA: *Future works at sites B, C and LC2 will be undertaken in accordance with Permit No. 1468 issued for the approved CGM in accordance with Section 87 of the National Parks and Wildlife Act, 1974.*
71	Aboriginal Cultural Heritage	Concern that the proposed modification is an infringement on traditional and sacred lands of Aboriginal groups, and breaches the right and freedom of Aboriginal groups under Section 116 of the Australian Constitution.	Barrick operates the approved CGM in accordance with the consents, mining leases, approvals, licences and permits issued by government agencies relevant to the approved CGM as described in Section 3.5 of the EA and would continue to operate in accordance with the statutory provisions relevant to works to be undertaken for the modified CGM as described in Sections 3.1 to 3.4 of the EA. Barrick complied with the *Native Title Act, 1993* (Cth), the NPW Act and other applicable legislation in obtaining the required consents, mining leases, approvals, licences and permits and does not consider that the approved CGM or the proposed modified CGM infringe the Constitution. As stated in Section 4.11.1 of the EA: *Barrick and its consultant archaeologists have obtained permits and consents under Section 87 and Section 90, respectively, pursuant to the NPW Act for the management of Aboriginal heritage artefacts at the approved CGM.* *Activities for the approved CGM have been conducted in accordance with relevant permit and consent conditions and the IACHMP. All construction earthworks have been monitored and no non-compliances have been reported (Barrick, 2005b, 2006a, 2007a, 2008a).* A description of the potential impacts and proposed management and mitigation measures applicable to the Aboriginal cultural heritage sites proposed to be disturbed for the modified CGM are provided in Sections 4.11.2 and 4.11.3 of the EA, respectively.
72	Aboriginal Cultural Heritage	Mitigation measures and management of sites to be impacted by the proposed modification should include excavation down to culturally sterile material and fluoro-dating on carbon material uncovered.	As stated in Section 4.11.3 of the EA, Barrick and its consultant archaeologists have obtained permits and consents under Section 87 and Section 90 respectively of the NPW Act for the management of Aboriginal objects at the approved CGM. The management and mitigation measures described in the EA for future works at sites B, C and LC2 are consistent with the requirements of the Section 87 permits and Section 90 consents. In addition, feedback received during consultation from representatives of the Aboriginal groups was considered during the development of the future management and mitigation measures described for future works at sites B, C and LC2. Further, as stated in Section 4.11.3 of the EA: *a representative sample of collected Aboriginal objects from sites B, C and LC2 may be dated by radiocarbon and/or luminescence techniques in an effort to determine their age, at the discretion of the permit holder.*

Number	Subject	Issue	Response
73	Stability	Confirmation of the stability of the proposed landforms – quantitative slope and/or rock stability analysis to confirm that the proposed landforms are achievable.	As described in Section 2.3.2 of the EA, the design configuration of the open pit would allow for factors of safety which are appropriate for operating pit conditions and the long-term stability of the lake protection bund. The berm widths and slope angles would continue to be reviewed and monitored through on-going geotechnical studies and data collection during mine development. Implementation of the current *Monitoring Programme for Detection of any Movement of Lake Protection Bund, Water Storage and Tailings Structures and Pit/Void Walls* (LPBMP) (Barrick, 2003) provides the data to base ongoing geotechnical reviews. Barrick proposes to continue the implementation of the LPBMP and to revise it to include a description of the modified CGM open pit design and monitoring requirements. The open pit design configuration would also be detailed in the Mining Operations Plan (MOP) which would be prepared in consultation with the DPI-MR and for DPI-MR approval. Prior to the commencement of open pit cutback operations proposed in the EA, the DPI-MR will be provided with the results of a quantitative geotechnical investigation in a revised MOP. This investigation will include confirmation, to the satisfaction of the DPI-MR, that the long term stability of the lake protection bund will be maintained. This investigation will include quantitative slope and/or rock stability analysis. Recent geotechnical investigations with external consultants into the causal factors associated with a wall slip will be incorporated into subsequent pit wall designs. The recent geotechnical investigations include the following: • updating the geotechnical model for the E42 deposit incorporating recent geotechnical mapping, photogrammetry, geology modelling, groundwater modelling (based on open pit dewatering and groundwater level monitoring records) and slope stability assessments for wall angles; and • preliminary long term bund stability analysis accounting for the locations of the final pit crest, perimeter waste emplacement and lake protection bund. These investigations have defined appropriate offset distances between the pit crest and lake protection bund based on pit sectors. Ongoing review and validation of these offset distances will be undertaken via ongoing geotechnical mapping, slope stability analysis, hydrogeological monitoring and modelling and pit wall monitoring.
74	Stability	Concern regarding the stability of soils in the pit area and continuation of mining following the slip which occurred in late 2007/early 2008. Concerns were raised regarding the safety of mining given the occurrence of the slip.	A slip occurred on 20 December 2007 on a transitional pit wall inside the final design outline. Staff working in the open pit vacated the area prior to the slip occurring. The slip was reported to the DPI-MR within the required timeframe and DPI-MR personnel have inspected the site. Slip material has been removed and mining is currently in the final stages of slip remediation. Barrick has commenced a geotechnical investigation with internal and external consultants into the causal factors associated with the slip. The results of this investigation will be incorporated into subsequent and final pit wall designs.

Number	Subject	Issue	Response
75	Water Supply	Concern regarding increases in water consumption, including risks to local water resources.	As stated in Section 2.7 of the EA: *The E42 Modification would extend the life of the approved CGM by approximately 11 years (from 13 years to approximately 24 years). Assuming commencement of the modified CGM in 2009, approximately 19 years of water supply would be required.* Section 2.7 presents a description of the proposed water supply arrangements for the modified CGM. In summary, the external water supply sources would comprise: a proposed saline groundwater supply borefield located within ML 1535; the Lachlan River; and the Bland Creek Palaeochannel. <u>Saline Groundwater Supply Borefield</u> The potential environmental impact associated with this extraction for the modified CGM is assessed in Section 4.4 and Appendix A of the EA. The control and/or preventative measures proposed for implementation for the saline groundwater supply borefield are described in Section 4.15.3 of the EA. <u>Bland Creek Palaeochannel</u> As stated in Section 4.4 of the EA, the E42 Modification would not change the current approved limits on the extraction of water from the CGM Bland Creek Palaeochannel Borefield, or the current system for managing groundwater levels around the CGM Bland Creek Palaeochannel Borefield. The contingency measures that have been developed for the approved CGM are described in Section 2.7 of the EA. <u>Lachlan River Water Entitlements</u> Water from the Lachlan River would continue to be accessed for the modified CGM by purchasing Temporary Water available from the regulated Lachlan River trading market. Barrick's High Security and General Security zero allocation water access licences enable trade of Temporary Water. As stated in Section 2.7 of the EA: *On average, demand of approximately 1,430 ML per annum would be required for the modified CGM from this source, however, volumes to be purchased would vary annually in accordance with the performance of the Bland Creek Palaeochannel, availability of water within the Lachlan River and availability of supply from the contained water storages within the ML. This supply source has proven to be reliable throughout the operating history of the approved CGM. Approximately 2,400 ML was extracted by Barrick in 2007.* *DWE trading records (DWE, 2008) show that volumes between 4,000 ML and 36,000 ML of temporary water have been traded annually since 2004. During the history of trading under the Water Sharing Plan for the Lachlan Regulated River Water Source, 2003 there has been adequate temporary water available on the market to supply the anticipated annual modified CGM demand from this source (i.e. approximately 1,430 ML per annum).*

Number	Subject	Issue	Response
76	Water Supply	Lack of information about water supply sources.	The Preliminary Assessment identified the potential requirement for augmentation. The proposed water supply arrangements for the modified CGM are described in Section 2.7 of the EA and shown on Figure 2-10. Section 2.7 outlines the proposed water supply arrangements for the modified CGM including proposed sources and provides information about: • measures within the process plant to reduce water demand; • internal and external water supply sources currently in place for the approved CGM which would remain for the modified CGM (i.e. Bland Creek Palaeochannel borefield, Lachlan River, open pit dewatering borefield, internal catchment drainage system, recycled plant and tailings storage facility water); • a proposed saline groundwater supply borefield located within ML1535; and • additional potential sources which, upon further investigation, may augment the supply proposal.
77	Water Supply	Concern regarding use of water from the Lachlan River.	Water from the Lachlan River would continue to be accessed for the modified CGM by purchasing Temporary Water available from the regulated Lachlan River trading market. The DWE and State Water are responsible for the allocation of water within the regulated Lachlan River System. Barrick's High Security and General Security zero allocation water access licences enable trade of Temporary Water. The availability of this Temporary Water is subject to allocation announcements made by the DWE and the prevailing market conditions at the time of the trade. As stated in Section 2.7 of the EA: *On average, demand of approximately 1,430 ML per annum would be required for the modified CGM from this source, however, volumes to be purchased would vary annually in accordance with the performance of the Bland Creek Palaeochannel, availability of water within the Lachlan River and availability of supply from the contained water storages within the ML. This supply source has proven to be reliable throughout the operating history of the approved CGM. Approximately 2,400 ML was extracted by Barrick in 2007.* *DWE trading records (DWE, 2008) show that volumes between 4,000 ML and 36,000 ML of temporary water have been traded annually since 2004. During the history of trading under the Water Sharing Plan for the Lachlan Regulated River Water Source, 2003 there has been adequate temporary water available on the market to supply the anticipated annual modified CGM demand from this source (i.e. approximately 1,430 ML per annum).*
78	Water Supply	Concern regarding increase in water extracted from the Bland Creek Palaeochannel.	As stated in Section 4.4 of the EA: *The E42 Modification would not change the current approved limits on the extraction of water from the CGM Bland Creek Palaeochannel Borefield, or the current system for managing groundwater levels around the CGM Bland Creek Palaeochannel Borefield.*
79	Water Supply	Concern regarding the use of water from an embargoed area.	Water licences for groundwater extraction from the saline groundwater supply borefield would be obtained in accordance with the requirements of the *Water Act, 1912*. Access rights to surface water from the Lachlan River are described in response to Issue W03 above.

Number	Subject	Issue	Response
80	Water Supply	Concern that Barrick would exceed the daily limit of groundwater extraction from the Bland Creek Palaeochannel.	As stated in Section 4.4 of the EA: *The E42 Modification would not change the current approved limits on the extraction of water from the CGM Bland Creek Palaeochannel Borefield, or the current system for managing groundwater levels around the CGM Bland Creek Palaeochannel Borefield.* These levels are stated in Table 1-1 of Section 1 of the EA as: • Maximum daily extraction of 15 (ML/day. • Maximum annual extraction of 3,650 ML per annum. • A total extraction of no more than 30,000 ML for the life of the mine.
81	Water Supply	Extraction from proposed saline groundwater supply borefield to be provided by existing entitlements.	Upon approval of the E42 Modification under the EP&A Act, Barrick would make relevant applications under the *Water Act, 1912* for the saline groundwater bores.
82	Water Supply	Number of production bores for the saline groundwater supply borefield.	As described in Section 2.7 of the EA, the saline groundwater supply borefield is proposed to comprise "*approximately four bores*" to "*supply 1 ML per day of saline water*". This number of bores is proposed on the basis of the results of pumping tests conducted for the EA. Currently Barrick have a total of eleven licensed test bores in the proposed saline groundwater borefield area and it is understood these could be authorised by utilisation of exemption 9 of Order No. 1 which enables conversion to a production bore licence where a test bore licence already exists. It is acknowledged that this exemption expires on 4 July 2009.
83	Water Supply	Security of water supply (in terms of volume and time) from the saline groundwater supply borefield and further information required to complete the assessment.	As described in Section 2.7 of the EA, a review of mineral drilling records has identified a prospective local saline alluvial aquifer located within ML 1535 to the east and south of the approved CGM open pit. The Hydrogeological and Tailings Seepage Assessment (Appendix A of the EA), describes pump tests that indicate a network of four bores established within this aquifer could supply 1 ML/day of saline water to the process plant. Barrick has conducted further testwork on the saline alluvial aquifer as proposed in the EA. The results of tests conducted on two licensed test bores indicate that sustainable yields from these bores are in the order of 0.7 ML/day for a period of approximately 5 years. This compares with the initial estimates of four bores generating 1 ML/day for a period of 19 years. It is expected that there is a high likelihood that this borefield could be developed using additional bores in ML 1535 to supply the equivalent supply described in the EA. This expectation is based on: • the yield results from the two tested bores in the saline alluvial aquifer; • the number of other existing licensed test bores (i.e. nine) available for conversion to production bores; • the results of bore yields from open pit dewatering bores; and • historic hydrogeological investigations in ML 1535 which have confirmed the presence of saline groundwater in three other local aquifers as described in the Hydrogeological and Tailings Seepage Assessment (Appendix A of the EA). Assuming approval of the E42 Modification, additional saline groundwater yield tests and investigations will be conducted during 2009 and results will be reported to DWE and DoP. This investigation and testwork programme will extend beyond 2009 as required.

Number	Subject	Issue	Response
83 (Cont.)	Water Supply (Continued)		Additionally, regional hydrogeological investigations over a wider area surrounding the CGM confirm the presence of more saline groundwater. As stated in the Hydrogeological and Tailings Seepage Assessment (Appendix A of the EA): *Regionally, groundwater resources within the region are associated with two geological Formations, including:* *…Cowra Formation which comprises aquifers of isolated sand and gravel lenses in predominantly silt and clay alluvial deposits, with perched groundwater of generally higher salinity.* This additional regional saline groundwater resource increases the likelihood that an equivalent supply of saline groundwater could be supplied from other saline groundwater sources within the Cowra Formation. Additionally, the option to purchase an equivalent volume of temporary water from the Lachlan River also increases the likelihood of supply.
84	Water Supply	Installation of pipeline to the saline groundwater supply borefield to be consistent with DWE policy *Guidelines for controlled activities: Laying pipes and cables in watercourses* (DWE, 2008).	Acknowledged. The design and installation of the pipeline to the saline groundwater supply borefield within Lake Cowal would be consistent with the policy detailed in the *Guidelines for controlled activities: Laying pipes and cables in watercourses* (DWE, 2008). In particular, in undertaking the works associated with the installation of the pipeline Barrick would: • minimise disturbance to soil and vegetation communities; and • maintain existing/natural hydraulic, hydrologic, geomorphic and ecological functions of Lake Cowal; and • rehabilitate disturbed areas post installation as appropriate. In addition, Section 4.15.3 of the EA describes the modified CGM saline groundwater supply borefield control and/or preventative measures proposed for implementation.
85	Water Supply	A Subsidence Management Plan should be developed for the extraction of saline water from the saline groundwater supply borefield.	Barrick undertakes biannual subsidence monitoring for the potential effects of subsidence associated with extraction from the Bland Creek Palaeochannel borefield. Results from monitoring undertaken to date show that ground levels in that area are not subsiding. As described in Section 2.7 of the EA, the saline groundwater supply borefield is proposed to comprise "*approximately four bores*" to "*supply 1 ML per day of saline water*". This is significantly less (i.e. approximately ten times less) than the amount of water extracted from the Bland Creek Palaeochannel borefield. At this rate of extraction Barrick considers the potential for subsidence to be negligible and, given the disconnection of this aquifer from the Bland Creek Palaeochannel, Barrick therefore does not propose to develop a Subsidence Management Plan.
86	Water Supply	Groundwater entitlements for the Bland Creek Palaeochannel held by CGM.	The licences issued for the Bland Creek Palaeochannel production bores under the *Water Act, 1912* (Licence numbers 70BL229248, 70BL229249, 70BL229250 and 70BL229251) specify daily and annual extraction limits. The life-of-mine Bland Creek Palaeochannel extraction limit is specified in the Development Consent.
87	Approval Process	Concern regarding the use of Section 75W of the *Environmental Planning and Assessment Act, 1979* for the proposed modification.	On 12 March 2008 the Minister for Planning approved of the Development Consent for the approved CGM being treated as an approval for the purposes of Section 75W of the EP&A Act.

Number	Subject	Issue	Response
88	Hydrogeology and Tailings Seepage	Concern regarding the drawdown resulting from extraction from the saline groundwater supply borefield within ML 1535.	As stated in Section 4.4.2 of the EA: *The Lachlan Formation (Bland Creek Palaeochannel)…is hydraulically well separated from the open pit dewatering borefield and saline groundwater supply borefield (ibid.). Due to this separation and the relatively small rate of dewatering from the open pit and saline groundwater supply borefield (i.e. both approximately 1 ML/day), no regional groundwater drawdown impacts on the Lachlan Formation (i.e. Bland Creek Palaeochannel) are anticipated as a result of the E42 Modification open pit dewatering (ibid.).* *Coffey Geotechnics (Appendix A) concluded that the potential drawdown impacts resulting from the E42 Modification would be less than those predicted in the EIS (Appendix A). GCS (2008) (Appendix A) also indicated that at the much smaller dewatering rates expected for the modified CGM, predicted drawdown impacts were likely to be less than EIS predictions.* With regard to potential impacts on other groundwater users, as stated in Section 4.4.2 of the EA: *GCS also reported that no groundwater users have been identified that may be affected by use of the saline groundwater supply borefield for the E42 Modification (ibid.)*