

CADIA HOLDINGS PTY LTD
CADIA EAST PROJECT – RESPONSES TO GOVERNMENT SUBMISSIONS

Government Agency/Local Government Authority	Issue Raised	CHPL Response
Orange City Council	Concern was raised that the potential Project groundwater impacts may impact on catchments contributing to Orange's water supply.	The catchments which form Orange City's water supply are part of the Macquarie River catchment. The predicted 1 m groundwater drawdown contour is located entirely within the Flyers, Cadiangullong and Swallows Creeks catchments, which form part of the Lachlan River catchment. The predicted 1 m groundwater drawdown contour does not extend north into the Spring Creek or Gosling Creek catchments (which are part of the Macquarie River catchment). Baseflow impacts on Spring or Gosling Creeks are not expected; therefore no impacts on Orange's water supply are predicted.
	A suggestion was raised that an offset programme for potential Project groundwater impacts should be investigated.	Licensing of the Cadia East underground mine dewatering is required for the Project under Part V of the Water Act, 1912. Cadia Holdings Pty Limited (CHPL) is currently in discussions with the NSW Department of Water and Energy (DWE) ¹ regarding required licensing. DWE's requirements may include retirement of licenses or some other form of water offset.
	Concern was raised that the Squirrel Glider monitoring programme proposed by CHPL will be ineffective as the local population may be lost.	As discussed in Section 4.5.3, of the Cadia East Project Environmental Assessment (EA) a Squirrel Glider monitoring programme would be undertaken for the Project, potentially culminating in a Squirrel Glider translocation programme if required: <u>Squirrel Glider Monitoring Programme</u> <i>The identification of the Squirrel Glider in the Project area is described in Section 4.5.1.</i> <i>A monitoring programme would be prepared for the Squirrel Glider within six months of Project Approval. The objectives of the monitoring programme would be to:</i> • <i>confirm the presence of a viable population of the Squirrel Glider within the remnant and determine the approximate numbers of animals in this population and if possible the sex ratio, age structure and breeding success of the population;</i> • <i>determine the home ranges of selected individuals within the Squirrel Glider population and their use of existing remnant habitats and adjacent habitats;</i> • <i>quantify the extent of hollows and other critical resources available to this population within the existing remnant and in adjacent areas;</i> • <i>detail the use of Squirrel Glider nest boxes as a habitat enhancement option within the offset area; and</i> • <i>develop and implement management measures for the Squirrel Gliders including a translocation programme².</i>

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Since the EA was published, DWE and Department of Environment and Climate Change (DECC) have become the Department of Environment, Climate Change and Water (DECCW).

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Translocation is the movement of living organisms from one area with free release in another.

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Orange City Council (Con't)		<i>The monitoring programme would be regularly reviewed in accordance with these objectives to facilitate appropriate and flexible management of monitoring methods and design. The review would be conducted by CHPL in consultation with the DoP and DECC after the completion of an agreed stage of the monitoring programme, and a report prepared with the findings and implications for the conservation of this population.</i> Elements of this programme have already been initiated by CHPL. It is considered that the population of Squirrel Gliders located within Project disturbance areas would be translocated within 12 months of approval of the Project (depending on seasonal factors that may dictate the optimal time to complete the programme). Monitoring would continue thereafter to determine the effectiveness of the programme. Since the EA was published, CHPL has learnt that another Squirrel Glider record exists on Black Rock Range (the proposed offset area for the Project). This means that the Squirrel Glider records in the Project disturbance areas are less significant, as the nearest records are only 11 kilometres (km) away, with the next known record being 50 km away and that a translocation programme is more likely to succeed.
	Concern was raised that 239 hectares (ha) of vegetation would be cleared.	Potential impacts on vegetation include areas affected by the subsidence zone and associated zone of influence. These areas would not be cleared. However, vegetation in the subsidence zone would be lost as the rock and soil beneath it subsides; whilst the zone of influence may be subject to surface cracking, the ground itself is not expected to subside, and hence the vegetation is expected to remain intact. These impacts would be offset by the Project offset package, including Black Rock Range, as discussed in Section 4.4.3 of the EA.
	Concern was raised that traffic levels would increase for the Project and that these increases would accelerate deterioration of the road pavement (including Forest/Cadia Roads).	As noted in the EA (Section 4.10.2), traffic levels generated by the Project increase for a short period of time relative to existing levels, then decrease relative to existing levels for the majority of the Project. CHPL has made contributions to Orange City Council (OCC) and other relevant Local Government Authorities for the Cadia Valley Operations since its inception. Contributions made include capital for new works and ongoing maintenance for 'wear and tear' on the local road network caused by traffic associated with the Cadia Valley Operations. CHPL has been in negotiation with OCC, Cabonne Shire Council (CSC) and Blayney Shire Council (BSC) regarding contributions for the Project and these contributions would continue for the Project. CHPL has an existing road maintenance agreement in place with OCC and CSC. A review of this agreement is being prepared for roads in Orange, Cabonne and Blayney LGAs relating to Forest, Cadia, Orchard and Woodville/Forest Reefs Roads to extend road maintenance agreements for the principal mine traffic routes.

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Orange City Council (Con't)	Concern was raised that OCC is undertaking separate traffic studies and these studies are expected to determine whether additional contributions are required by CHPL for the road network on the southern side of Orange.	The Road Transport Assessment (TRAFFIX, 2009) (Appendix I of the EA) concluded that whilst traffic levels would increase relative to existing levels for a short period of time, traffic generation would be less than existing traffic levels for the majority of the Project. Section 4.10.2 of the EA states: Cadia East Project Traffic Generation Table 4-34 summarises existing and predicted daily vehicle movements (traffic in both directions) generated by different phases of the Project. As described in Section 2.3, the Project would involve various periods of different levels of mining and construction activity (e.g. tailings storage facilities embankment lifts). Three traffic scenarios were investigated to determine the predicted impact of the Project traffic flows on the local road network during the Project life. The three scenarios were: - Scenario 1 (Year 2) – includes the operation of Cadia Hill, Ridgeway, Ridgeway Deeps and the development/construction of the Cadia East underground mine (representative of the maximum Project related traffic movements). - Scenario 2 (Year 4) – includes the operation of Cadia Hill, Ridgeway Deeps and the Cadia East underground mine. - Scenario 3 (Year 17) – includes the operation of the Cadia East underground mine. Table 4-35 presents the predicted impact of the Project traffic flows in the local road network for the three scenarios. Scenario 1 (Year 1) represents the greatest potential traffic impact associated with the Project as it includes the operation of the two existing mines (i.e. Ridgeway and Cadia Hill) and the construction/development of the Project. Project related employee traffic movements in Scenarios 2 and 3 (Years 4 and 17) would be lower than the traffic movements associated with the existing Cadia Valley Operations (although heavy vehicle movements keep the total traffic movements above the existing traffic volume in some cases [Table 4-35]) (Appendix I). The existing Level of Service (Table 4-32) of all assessed roads is not expected to change as a result of the Project (Appendix I). Peak Hour Intersection Performance The peak hour performance of the key intersections along the principal access route (i.e. Forest, Orchard and Cadia Roads) to the Project site were assessed using the intersection analysis computer program SIDRA for Scenario 1 (i.e. the peak Project related traffic scenario) (Appendix I). All of the intersections assessed would continue to operate very satisfactorily during the critical morning peak period, with an Intersection Level of Service A expected at all intersections (Appendix I).

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Orange City Council (Con't)		The Road Transport Assessment (Appendix I of the EA) also considered cumulative impacts associated with hospital developments to the south of Orange. Section 4.10.2 of the EA states: <i>Hospital Developments</i> <i>As described in Section 4.10.1, the Orange Base Hospital Redevelopment and the proposed Orange Private Hospital Precinct on Forest Road in Orange have some potential to influence traffic generation during the life of the Project.</i> <i>Traffic generated from these developments would largely be limited to the urban areas of Orange (Appendix I). The peak period for general traffic generation in Orange, including the additional peak hour traffic associated with these hospital developments is after 7.00 am, and is therefore likely to have little influence on periods of peak Cadia Valley Operations traffic flows (i.e. 6.00 am to 7.00 am) and hence limited effect on key intersection performance during these periods.</i> <i>The road network in the vicinity of the Cadia Valley Operations would generally be unaffected by the hospital operations. However, Forest Road, north of the hospital developments may experience some limited and short-term reduction in the level of service where the hospital developments overlap with peak Project construction (i.e. Year 2) (Appendix I).</i> <i>Masson Wilson Twiney (2006) reported that at full development of the Orange Base Hospital Redevelopment (i.e. approximately ten years after commencement) the intersection of Forest Road and Huntley Road would have limited spare capacity during the hospital's afternoon peak hour. At this stage of the Project, light vehicle movements associated with workforce transport would be less than the current levels as the number of employees at the Cadia Valley Operations would reduce after the closure of Cadia Hill and Ridgeway in Years 4 and 8 respectively.</i> Given the above, it is considered that the Project Road Transport Assessment (Appendix I) adequately assesses potential impacts, including the road network to the south of Orange.
	Concern was raised that development contributions should be made to allow for contributions towards required infrastructure.	CHPL has made development contributions to OCC and other relevant Local Government Authorities for the Cadia Valley Operations since its inception. CHPL has been in negotiation with OCC, CSC and BSC regarding contributions for the Project and contributions towards infrastructure and community enhancement are proposed for the Project. During negotiations for development contributions with councils, consideration has been given to contributions towards the upgrade of the Forest, Huntley, Sharps Road intersections as a community enhancement project.
	Concern was raised that the existing water supply agreement between OCC and CHPL should be mentioned in the Project Approval conditions for the Project.	CHPL has a legal commercial agreement with OCC regarding the use of treated effluent at the Cadia Valley Operations. The terms of the water supply agreement were established separately to the Cadia Hill project. CHPL considers that any review of the water supply agreement should not be linked to the EA. Notwithstanding, following cessation of mining, CHPL has agreed to negotiate with the Council in good faith towards "making the water infrastructure available for the public benefit of the region". As this agreement is already in place CHPL considers that a project approval condition is not required.

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Orange City Council (Con't)	Concern was raised that OCC should be involved in the Mine Closure Plan in relation to developing measures to mitigate the socio-economic impacts of future mine closure.	CHPL would consult with OCC regarding the Mine Closure Plan. Section 4.11.2 of the EA states: <i>CHPL would develop a Mine Closure Plan before Project closure. The plan would be prepared in consultation with OCC, CSC, BSC, DoP and the community and would include consideration of amelioration of potential adverse socio-economic effects due to the reduction in employment at Project closure.</i>
Roads and Traffic Authority	Concern was raised that the construction of the portion of the concentrate and return water pipelines that would cross the Mid Western Highway at Blayney should be undertaken in accordance with a number of standard Roads and Traffic Authority (RTA) requirements.	CHPL would construct the portion of the concentrate and return water pipelines that would cross the Mid Western Highway at Blayney in accordance with RTA requirements and would submit the required forms and consult with the RTA prior to construction. Construction of the pipelines is anticipated to occur during Years 2 and 3 of the Project.
Department of Planning – Heritage Branch	A condition of Project Approval was recommended that the Cadia Interpretation Plan should “address the merits of previously proposed options for future interpretation including an interpretation centre; more community based interpretation for the whole mining area and opportunities for partnership/collaboration with other agencies and museums in the region”.	Consistent with the Project Statement of Commitments, CHPL agrees that the Cadia Interpretation Plan requires further development and finalisation for the Project. The Cadia Interpretation Plan would be updated in consultation with the Department of Planning (DoP) Heritage Branch as described in the Statement of Commitments (Section 6 of the EA): <i>Cadia Interpretation Plan</i> <i>The location and display of European heritage items potentially impacted by the Cadia Valley Operations is conducted in accordance with the Cadia Interpretation Plan. The Cadia Interpretation Plan will be reviewed and revised, if required, to incorporate the Project.</i> CHPL has been supportive of initiatives to display heritage material in the district. CHPL has been a sponsor of the Golden Memories Museum in Milthorpe and has provided artefacts for display at that museum. In addition, CHPL provides historical tours on the mining lease to interested persons, where requested. The Marsden memorial rural history research centre has also recently been commissioned by CHPL to undertake a report into mining history in the central-western region.
Department of Environment and Climate Change (now Department of Environment, Climate Change and Water)	The Department considers the proposed offset, based on Black Rock Range (the Stratton property), revegetation of cleared areas within the offset area, and rehabilitated mine areas, to be not maintaining or improving biodiversity values for the following reasons:	As stated in Section 4.4.3 of the EA and in the specialist flora and fauna studies undertaken for the Project: <i>The enhancement and conservation measures proposed as part of the offset would help maintain (and very likely improve) the flora biodiversity values of a substantial area of vegetation outside of the Project area.</i>

Government Agency/Local Government Authority	Issue Raised	CHPL Response
Department of Environment and Climate Change (now Department of Environment, Climate Change and Water) (Cont)	The areas to be impacted/cleared are of high conservation value, in good condition and includes an intact riparian area.	As stated in Section 4.4.3 of the EA: <i>The offset area and surrounds was surveyed by FloraSearch (2006) (flora), Western Research Institute (2006) (general vertebrate fauna) and Greg Richards and Associates (2006) (bat fauna).</i> ... <i>Similar vegetation communities occur in the Project area and within the offset area, particularly Vegetation Communities 1a, 3a and 3b.</i> ... <i>A higher diversity of fauna habitat niches are available within the offset area [than the Project area], including dry western gullies, wetter western gullies (with ephemeral streams and rock pools), Box-Gum Woodland, Sandstone cliff formation, regrowth heathy woodland, old growth woodland, cleared agricultural land, riparian habitat along the Panuara Rivulet, and rocky outcrops.</i> ... <i>Overall, the surveys indicated that the habitat within the offset area is considered of equal or higher conservation value when compared to the habitat which would be cleared for the Project.</i> ... <i>The offset area is suitably located as it is within the vicinity of the Project, being situated approximately 11 km to the west, and within the same bioregion.</i>
	The area to be impacted/cleared includes a viable population of Squirrel Gliders, and at least one poorly known and rare orchid species.	The EA recognises the potential impact on the Squirrel Glider. As stated in Section 4.5.3 of the EA: <i>A monitoring programme would be prepared for the Squirrel Glider within six months of Project Approval. The objectives of the monitoring programme would be to:</i> <i>confirm the presence of a viable population of the Squirrel Glider within the remnant and determine the approximate numbers of animals in this population and if possible the sex ratio, age structure and breeding success of the population;</i> <i>determine the home ranges of selected individuals within the Squirrel Glider population and their use of existing remnant habitats and adjacent habitats;</i> <i>quantify the extent of hollows and other critical resources available to this population within the existing remnant and in adjacent areas;</i> <i>detail the use of Squirrel Glider nest boxes as a habitat enhancement option within the offset area; and</i> <i>develop and implement management measures for the Squirrel Gliders including a translocation programme.</i> In August 2009, Cenwest Environmental Services commenced monitoring for the Squirrel Glider in the Southern Remnant. To date, and despite intensive and targeted survey effort no Squirrel Gliders have been recorded. CHPL has installed Squirrel Glider nest boxes in the Southern Remnant and will monitor their usage.

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Department of Environment and Climate Change (now Department of Environment, Climate Change and Water) (Con't)		In addition, and since the EA was published, CHPL has learnt that the Squirrel Glider was recorded in the proposed offset area at Black Rock Range by Anne Kerle in 2008 during a study on the ecology of Common Ringtail Possums (<i>Pseudocheirus peregrinus</i>) undertaken through the University of Western Sydney. The record will be added to the DECCW database. DECCW has also raised concern in relation to a potentially rare orchid species. Dr Bower has provided the following commentary on the species: <i>At the time of the flora surveys for the Cadia Hill Project, the taxonomy of orchids was undergoing major revision. The orchid taxonomist with the Centre for Plant Biodiversity and Conservation in Canberra, David Jones, considered that populations of two taxa of greenhood plants identified in the surveys may constitute new species. These were referenced in the flora report as Pterostylis alata (synonym Pterostylis striata) and Pterostylis aff. longifolia (biotype 2). Subsequently, these populations have been resolved as belonging to Diplodinium striatum and Bunochilus stenosepalus, respectively. Diplodinium and Bunochilus are two recently erected genera split from Pterostylis.</i> <i>Diplodinium striatum is a widespread and locally common species found in Victoria and the southern parts of eastern NSW (D.L. Jones, A Complete Guide to the Native Orchids of Australia, Reed New Holland, 2006). Bunochilus stenosepalus is relatively common in the Orange to Cowra area (D.L. Jones, A Complete Guide to the Native Orchids of Australia, Reed New Holland, 2006).</i>
	The area to be impacted/cleared may be underestimated, due to possible misclassification of derived native grasslands and box-gum grassy woodlands as scattered trees in agricultural land	As described in Appendix B of the EA, FloraSearch mapped the extent of White Box EEC and used relevant DECC guidelines. Scattered treed areas not mapped as White Box EEC have little to no native species in the understorey.
	The majority of the area proposed to be offset, is not under any obvious threat and is a relatively uncleared vegetation type.	The clearance of native vegetation in NSW is controlled under the <i>Native Vegetation Act, 2003</i>. However, the offset area is currently subject to grazing by sheep and cattle to varying degrees and intensities, and could potentially be grazed at higher intensities and/or by other stock types (eg. goats) in the future. It is also currently subject to vegetation clearing required for routine agricultural management activities (permitted under the <i>Native Vegetation Act, 2003</i>). As stated in Section 4.4.3 of the EA: <i>The offset area is located on freehold land currently zoned as Zone 1(a) under the Cabonne LEP. The land is currently largely unprotected and is grazed by sheep and cattle.</i> ... <i>Similar vegetation communities occur in the Project area and within the offset area, particularly Vegetation Communities 1a, 3a and 3b.</i> ... <i>The vegetation and habitat within the offset area ranges from good to highly degraded condition. Grazing by sheep and cattle is considered to be the greatest existing threat to the vegetation and to a lesser extent weeds, animal pests and fire management (FloraSearch, 2006; Western Research Institute, 2006; Greg Richards and Associates, 2006).</i>

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Department of Environment and Climate Change (now Department of Environment, Climate Change and Water) (Con't)		Approximately 210 ha of the Box-Gum Woodland which occurs in the offset area meets the criteria of the Box-Gum Woodland EEC listed under the TSC Act (after NPWS, 2002a, 2002b; NSW Scientific Committee, 2002c; DECC, 2009b), and approximately 154 ha meets the criteria of the Box-Gum Grassy Woodlands and Derived Native Grasslands CEEC under the EPBC Act (after Threatened Species Scientific Committee, 2006a, 2006b; DEH, 2006a). In addition to the conservation of Black Rock Range, it is proposed that significant areas of existing native vegetation communities would be enhanced (some 653 ha) and significant areas of cleared agricultural land would be revegetated (some 173 ha) in the offset area. Table 4-9 of the EA summarises the comparison of remnant woodland disturbance areas (238 ha) against the areas to be conserved (826 ha):														
		Table 4-9 Cadia East Offset Quantification <table><tr><th>Area</th><th>Description</th><th>Approximate Size (ha)</th></tr><tr><td>Disturbance Area</td><td>Remnant vegetation communities/habitat which would be cleared, lost or modified as a result of the Project.</td><td>238*</td></tr><tr><td>Enhancement Area</td><td>Remnant vegetation communities/habitat which would be enhanced through natural regeneration and management for conservation.</td><td>653[#]</td></tr><tr><td>Revegetation Area</td><td>Re-establishment of woodland in cleared agricultural land by revegetation.</td><td>173[#]</td></tr><tr><td colspan="2">Total Area Conserved (ha)</td><td>826[#]</td></tr></table> * Approximate areas are based on vegetation mapping shown on EA Figure 4-22. # Approximate areas are based on vegetation mapping shown on EA Figure 4-24.	Area	Description	Approximate Size (ha)	Disturbance Area	Remnant vegetation communities/habitat which would be cleared, lost or modified as a result of the Project.	238*	Enhancement Area	Remnant vegetation communities/habitat which would be enhanced through natural regeneration and management for conservation.	653 [#]	Revegetation Area	Re-establishment of woodland in cleared agricultural land by revegetation.	173 [#]	Total Area Conserved (ha)	
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	The offset area does not include as much riparian area as the impact site.	The Cadia East offset package contains more riparian areas than the disturbance areas associated with the Project. CHPL calculates that the length of Copper Gully Creek within the Cadia East zone of influence is approximately 1,200 m. The length of Copper Gully Creek predicted to be affected within the subsidence zone is 760 m. The total riparian area associated with Panuara Rivulet adjacent to Black Rock Range is 2,900 m, with 1,270 m contained within the boundary of the proposed offset area (under 'give and take' arrangements with the adjoining landholder).														
	The offset area is not well connected to other remnant vegetation.	As stated in Section 4.4.3 of the EA: 'It [the offset area] forms part of an important localised discontinuous bushland complex (Barton Nature Reserve, Black Mountain, Mount Canobolas, Grahams Mountain, Lees Mountain, Columbine Mountain and the Black Rock Range) with inter-connection provided by smaller remnant woodland areas, semi and uncleared Box Woodlands on valley floors and mid-slopes, with either native or improved pasture understoreys, as well as important creek and early order drainage lines acting as important integrative wildlife corridors (Appendix A).														

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Department of Environment and Climate Change (now Department of Environment, Climate Change and Water) (Con't)	The productivity and landscape position of the offset site is not of the same quality as the impact site.	As stated in Section 4.4.3 of the EA: <i>The offset area is suitably located as it is within the vicinity of the Project, being situated approximately 11 km to the west, and within the same bioregion.</i> ... <i>Similar vegetation communities occur in the Project area and within the offset area, particularly Vegetation Communities 1a, 3a and 3b.</i> ... <i>A higher diversity of fauna habitat niches are available within the offset area [than the Project area], including dry western gullies, wetter western gullies (with ephemeral streams and rock pools), Box-Gum Woodland, Sandstone cliff formation, regrowth heathy woodland, old growth woodland, cleared agricultural land, riparian habitat along the Panuara Rivulet, and rocky outcrops.</i>
	The security of tenure and long term management of the proposed offset is not guaranteed.	As stated in Section 4.4.3 of the EA: <i>The conservation of the offset areas would be secured through rezoning relevant tenure to reflect conservation purposes (i.e. Zone E2 Environmental Conservation under the Standard Instrument [Local Environmental Plans] Order 2006). The zoning and re-conditioning would be undertaken in consultation with the DoP and CSC. The security of the offset would be established within 12 months of Project Approval or a time period to the satisfaction of the Director-General of the DoP. The offset area would be managed for conservation purposes in perpetuity.</i>
	The offset area does not include a viable population of squirrel gliders.	Since the EA was published, CHPL has learnt that the Squirrel Glider was recorded in the proposed offset area at Black Rock Range by Anne Kerle in 2008 during a study on the ecology of Common Ringtail Possums (<i>Pseudocheirus peregrinus</i>) undertaken through the University of Western Sydney. The record will be added to the DECCW database.
	The Department considers that for the mine rehabilitation areas to be part of the offset the following is required: 1. The areas must be primarily for conservation and secured in tenure in perpetuity. 2. The areas must be rehabilitated to nominated vegetation types and minimum condition thresholds must be met. Other threats, foxes, cats, rabbits and hares and other feral herbivores and invasive exotic perennial grasses must be controlled.	As stated in Section 5.5 of the EA: <i>Upon cessation of mining operations, it would be expected that tenure of the mining lease would be maintained by CHPL until such time as the relevant statutory requirements are achieved (e.g. fulfilment of mining lease conditions). CHPL would then seek to relinquish the Cadia Valley Operations mining leases. Assessment of rehabilitation success (i.e. satisfaction of lease relinquishment criteria) would be conducted in consultation with relevant authorities and stakeholders.</i> As stated in Section 4.5.3 of the EA: <i>The FFMP (CHPL, 2009b) and LMP (CHPL, 2009a) provide measures to control rabbits and other animal pests. The pest control measures include removing available feed, locating and removing warrens (e.g. by mechanical excavation) and baiting. These measures would be continued for the Project.</i>

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Department of Environment and Climate Change (now Department of Environment, Climate Change and Water) (Con't)	DECC recommendations in relation to water, waste, noise, blasting, air, Aboriginal heritage and rehabilitation.	CHPL notes that the DECC generally concurs with the Statement of Commitments and other mitigation measures described in the EA in relation to these aspects. CHPL would liaise with the DECC regarding the required variations to the existing Environmental Protection Licence (No. 5590) to incorporate the Project.
Department of Primary Industries	The Department of Primary Industries recorded their conditional support for the Project. Concern was raised in regard to creek crossings associated with the new concentrate and return water pipelines to be constructed between Cadia Valley Operations and Blayney (and on to the CVO Dewatering Facility).	Section 2.9.1 of the EA describes that the new pipelines would be generally constructed within the existing pipeline easement and that leak/spillage protection near major watercourses would be in the form of steel casing: <i>The new concentrate pipeline would be positioned entirely within the existing concentrate pipeline easement. The section of the new concentrate pipeline from the existing Blayney Dewatering Facility to the CVO Dewatering Facility would be located within the railway line easement, which runs between the two sites (Figure 1-3).</i> <i>Leak detection and shutdown systems would be installed in the pipeline to identify and respond to variations in flow rates (used to detect leaks in the pipeline or other malfunctions). At larger creek crossings (e.g. Cowriga Creek), the pipeline would be encased in steel structures, equivalent to those on the existing pipeline, with the capacity to contain leakage if the pipeline was to fracture before automatic cut-off valves were activated.</i> <i>The existing return water pipeline, which is located immediately adjacent to the concentrate pipeline would remain in use for the life of the Project.</i> The existing concentrate and return water pipelines are generally buried, but are affixed to the existing road bridges at Cowriga Creek and Flyers Creek. The new pipelines would be constructed in a similar fashion at these creek crossings, as well as over the Belubula River at Blayney (ie. no excavation, trenching, diversion of watercourse or similar obstruction of the creek would be necessary).
	Concern was raised regarding the crossing of Woodville Creek by the realigned Cadia Road. Concern was raised in regard to the provision of fish passage for the proposed gauging stations on Flyers Creek and Cadia Creek and the raise of Rodds Creek Water Holding Dam.	BSC would be the proponent for the Cadia Road realignment. New gauging stations to allow for monitoring of surface water flow would be constructed for the Project (see Figure 4-16 of the EA for locations): • Additional gauging station on Flyers Creek upstream of Long Swamp Road (GS412705). • Additional baseflow weir on Cadia Creek upstream of the existing weir (CCBW). Similar to the construction/planning process for other monitoring weirs/stations in the area, the final locations and construction details of these gauging stations would be determined in consultation with NSW Department of Primary Industries (DPI) Fisheries and the DWE, including the potential to provide for fish passage.

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Department of Primary Industries		The existing Rodds Creek Water Holding Dam is located upstream of the existing Northern and Southern Tailings Storage Facilities, in the headwaters of Rodds Creek. The existing Rodds Creek Water Holding Dam does not have an up-catchment diversion system (ie. a system to divert the catchment upstream of the dam downstream of the dam and tailings storage facilities) in place and there are no means for fish passage. The dam would be raised by some 15 m for the Project and would consume most of the rest of the upstream catchment. This catchment is located entirely within a forestry plantation area. There is no feasible mechanism of providing for fish passage as the immediate downstream catchment is consumed by tailings storages, and the upstream catchment is limited in size and contains limited aquatic habitat value.
Cabonne Shire Council	While supportive of the overall proposed development, CSC is negotiating with CHPL regarding road upgrades/relocation and water supply/water management issues.	CHPL would continue to seek an open and constructive dialogue with CSC throughout the Project. CHPL has recently been in negotiation with CSC regarding the Cadia Road/Four Mile Creek Road intersection, notwithstanding that the Project traffic studies found that upgrade of the intersection is not essential (as the intersection analysis demonstrates continued satisfactory performance with its current geometry).
Blayney Shire Council	BSC recorded their support for the Project.	N/A
Department of the Environment, Water, Heritage and the Arts (Commonwealth)	Figure 4-10 indicates the predicted groundwater drawdown that will occur following subsidence in the Cadia East area. Are there any ecological communities listed under the EPBC Act that occur within the predicted area of drawdown? If so, what are the potential impacts on these communities from drawdown and what mitigation measures are proposed?	CHPL has mapped vegetation communities within the proposed Project disturbance areas (Figure B3 in Appendix B of the EA). CHPL has also mapped vegetation within the Cadia Valley Operations mining leases and adjoining land which it owns. The majority of this land is located to the west of the mining leases and it not within the predicted area of groundwater drawdown (hence it was not included in the EA). Vegetation communities within the privately-owned land located to the north-east and within the predicted area of groundwater drawdown have not been mapped. However, this is not seen as a limiting factor as it is evident from aerial photography and local knowledge that the area is predominantly cleared agricultural land with scattered trees, and NSW State Forest owned exotic Monterey Pine (<i>Pinus radiata</i>) plantation areas. The agricultural landscape is typical of the local area (and the majority of rest of the Central West region) in that there are various small patches of native vegetation are scattered throughout. It is possible that some of these patches could be classified as ecological communities listed under the EPBC Act (in particular, the Box-Gum Grassy Woodlands and Derived Native Grassland CEEC). However most, if not all, would be subject to grazing and vegetation clearing activities (permissible as 'routine agricultural management activities' under the <i>NSW Native Vegetation Act, 2003</i>). The only potential impacts on vegetation communities in this area would be if the vegetation is substantially groundwater dependent, and the local watertable is lowered significantly by the Project. Potential impacts on vegetation associated with springs and seepage areas to the north-east of the Project are discussed in Section 4.4.2 of the EA.

Government Agency/Local Government Authority	Issue Raised	CHPL Response
Department of the Environment, Water, Heritage and the Arts (Commonwealth) (Con't)	In paragraph 1 under Offset Area what does 'largely unprotected' refer to? That is, what level of protection and to what extent is the proposed offset area protected at the moment?	AGE (2009) identified several seepage areas and springs in the agricultural land in the upper headwaters of Cadia and Flyers creeks to the north and the north-northeast of the subsidence zone. These springs are likely to be either perched or regional springs (AGE, 2009). It is possible that native tree species which occur in the vicinity of some of these localised seepages or springs (e.g. Yellow Box [<i>E. melliodora</i>]) may use groundwater. However, AGE (2009) has assessed the potential impacts on these features and has concluded that significant impacts are unlikely to occur (Section 4.2.2 and Appendix G). As a result, no potential adverse impacts on this vegetation are expected to occur as a result of the Project. Specific mitigation measures for vegetation communities in the area to the north-east of the mine (ie. up to 8 km from the subsidence zone) are not considered necessary, due to the low likelihood of significant impacts occurring. In addition, operational experience at Cadia Hill and Ridgeway has indicated that vegetation communities within several hundred metres of the active operations show no evidence of adverse impact in areas where mining has occurred for more than 10 years and large groundwater drawdowns have been recorded. Notwithstanding the above, the Project Groundwater Management Plan is considered by CHPL to provide a suitable mechanism to monitor predicted versus actual impacts on groundwater levels (ie. to confirm the modelling was conservative) and to document agreed contingency measures to be implemented if material Project-related impacts are considered likely to occur. Section 4.4.3 of the EA states: <i>The offset area is located on freehold land currently zoned as Zone 1(a) under the Cabonne LEP. The land is currently largely unprotected and is grazed by sheep and cattle.</i> ... <i>The vegetation and habitat within the offset area ranges from good to highly degraded condition. Grazing by sheep and cattle is considered to be the greatest existing threat to the vegetation and to a lesser extent weeds, animal pests and fire management (FloraSearch, 2006; Western Research Institute, 2006; Greg Richards and Associates, 2006).</i> The clearance of native vegetation in NSW is controlled under the Native Vegetation Act, 2003. However, the offset area is currently subject to grazing by sheep and cattle to varying degrees and intensities, and could potentially be grazed at higher intensities and/or by other stock types (eg. goats) in the future. It is also currently subject to vegetation clearing required for routine agricultural management activities (permitted under the Native Vegetation Act, 2003).

Government Agency/Local Government Authority	Issue Raised	CHPL Response
Department of the Environment, Water, Heritage and the Arts (Commonwealth) (Con't)	Does Figure 4-24 show the most up-to-date boundary for the proposed offset area? If not, please provide the most recent map showing the current boundary. Is the location of the boundary expected to change in the future? In 1st paragraph, 56 ha of state-listed box gum grassy woodlands is intended to be 'enhanced' to meet the Commonwealth listing criteria how is this area proposed to be enhanced? That is, what measures are proposed in order to improve the quality of these areas? In 3rd paragraph, 173 ha of agricultural land is proposed to be revegetated. What measures are proposed to revegetate this area?	Yes. This is the proposed offset for the Project and the concept is supported by CHPL and the background landholder of the property 'Ulah' (the property incorporating Black Rock Range). The final boundary locations would be subject to survey prior to contracts being exchanged with the background landholder of the property 'Ulah'. A broad description of the proposed measures to be used enhance the quality of these areas is provided in Section 4.4.3 of the EA. In particular, it states that: <i>A management plan would be prepared by a suitably qualified person(s) to facilitate the revegetation and regeneration of native vegetation and habitats and provide a framework for continued management and monitoring.</i> ... <i>The plan would describe measures including, but not necessarily limited to:</i> <i>provision of appropriate fencing to exclude grazing from the remainder of the Ulah Property (the background landowner of Black Rock Range) thereby assisting natural regeneration;</i> <i>native revegetation plantings using a local seed source;</i> <i>removal of unnecessary existing fences to facilitate fauna movement;</i> <i>soil erosion management;</i> <i>weed and pest management;</i> <i>fire management measures to include irregular mosaic burnings;</i> <i>signage of the offset area;</i> <i>restriction of vehicular and people access; and</i> <i>monitoring, auditing and reporting the performance of the offset</i> The management plan would be prepared in consultation with the relevant government agencies, including DEWHA, and would include specific details of plant species to be used, timing of activities, monitoring and reporting. The Fauna Assessment provided in Appendix A of the EA, states the conservative area of potential habitat for EPBC listed fauna species (ie. the entire area of woodland is conservatively considered to be potential habitat for EPBC listed fauna species). For both the Superb Parrot and Swift Parrot, Appendix A of the EA states: <i>'The various patches of remnant vegetation communities/habitat that would be disturbed for the Project equate to a total area of approximately 238 ha.'</i>

Government Agency/Local Government Authority	Issue Raised	CHPL Response
New South Wales Office of Water	CHPL is required to obtain appropriate water entitlement during the project to account for dewatering requirements, production bore extraction and surface water impacts.	CHPL has discussed licensing requirements for the project directly with NOW, and is aware of the need to obtain appropriate water entitlements during the mine life.
	Additional licensing is required under the Water Act, 1912 for the increase to Rodds Creek Dam, backbone pipeline, increase in pumping capacity on the Belubula River, weir installation and bore relocations.	CHPL has submitted licence applications to NOW for the proposed raising of Rodds Creek Dam, backbone pipeline, and increase in pumping capacity on the Belubula River. Approval of these applications is pending. CHPL would submit licence applications to NOW for weir installations and bore relocations as required during the mine life.
	Significant groundwater drawdown is predicted by the project which must be addressed through a comprehensive groundwater and surface water management plan. This is to include monitoring to confirm predictions and identify any unforeseen impacts with associated contingencies.	CHPL agrees with the need for comprehensive management plans for groundwater and surface water. For example, the EA includes a commitment to develop and implement a Contingency Water Supply Plan for surface water, as well as a Groundwater Management Plan (GWMP) for the area within the Project 1m drawdown contours (i.e. Figure 4-13). The GWMP would include: • a compilation of the available construction and use information on each existing bore and spring in the potentially affected area; • details of an inspection of each bore and spring by a suitably qualified hydrogeologist (where permission from the owner was granted); • details of the groundwater monitoring programme (location, parameters, frequency and reporting) to be used by CHPL to monitor and detect impacts on local aquifers; and • details of monitoring triggers and corresponding measures to mitigate Project-induced impacts on water supply availability. The mitigation measures could include, but are not necessarily limited to lowering of pumps, deepening of bores, or provision of new bores/alternative water supplies. CHPL has commenced the compilation of data and preparation of the GWMP. It is envisaged that the GWMP and the Contingency Water Supply Plan would be finalised in consultation with NOW and to the satisfaction of the Director-General of DoP after Project approval is granted. CHPL would consult with relevant landowners as required during the development and implementation of the GWMP. The approved plans would be publicly available on CHPL/Newcrest's website.
	NOW is continuing a licence review of the operation of Cadiangullong Dam which is not yet complete and is unlikely to be finalised prior to determination of this project. NOW recognises that the dam operation is a key component of the water security for the site, however it is recommended due to time constraints that this be acknowledged and conditioned upon determination. NOW is working with CHPL on finalising an appropriate release protocol.	CHPL supports this suggested approach to reviewing and potentially revising the Cadiangullong Dam release protocol.