Submitter no.	Submitter	Category	Sub-category	Issue - Details	Submitter Recommendations / Suggested Mitigation	Relevant EIS Section	Proponent response (November 2013)
1	Townsville Enterprise Limited	Transport	Port facilities	We would strongly encourage and welcome the use of the Port of Townsville as a key gateway for the import of mine construction equipment and material	Identify the Port of Townsville as the priority Port of the import of mine construction equipment and material	Vol 2, Sect 11.3 Vol 3, Sect 11.3 Vol 4 Appendix W, Sect 3.3 Vol 4 Appendix AG, Sect 3.3	Noted. The EIS identifies the Port of Townsville as potential point for import of equipment and materials. The specific quantum of these imports will be dictated by logistics, supplier locations etc.
1	Townsville Enterprise Limited	Social	Social	We would strongly encourage and welcome the use of Townsville as a key service and employment hub for the development of the Carmichael Coal Mine	Identify the Townsville region as the priority service and employment hub for the development of the Carmichael Coal Mine.	Vol 1, Chapter 3 Vol 4, Appendix F, Section 5.3.1 and 5.4.1	Noted. The EIS identifies Townsville as a potential point for FIFO and services supply. The specific quantum of FIFO, service provisions etc. will be dictated by specific suppliers.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	This EIS assessment is inadequate. It fails to satisfy the strategic sustainable development mandates of the Queensland Government's Sustainable Planning Act (2009) (the Act), and its goal of limiting greenhouse gas emissions (GHGE) associated with development.		Vol 2, Ch 8 Vol 3, Ch 8 Vol 4, App T and App AE (general)	Noted. The emissions identified by the submission are classified as Scope 3. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	This EIS assessment is inadequate. It fails to satisfy the strategic sustainable development mandates of the Queensland Government's Sustainable Planning Act (2009) (the Act), and its goal of limiting greenhouse gas emissions (GHGE) associated with development.		Vol 2, Ch 8 Vol 3, Ch 8 Vol 4, App T and App AE (general)	Noted. The emissions identified by the submission are classified as Scope 3. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The Act requires holistic consideration of climate change impacts of GHGE beyond the immediate confines of the Projects that are associated with transportation of export production to end use power stations and burning of coal to produce electricity. Due to incomplete terms of reference issued by the Queensland Government this EIS considers only very narrowly defined Scope 1 and Scope 2 emissions associated with mine and rail infrastructure developments. GHGE emission assessments associated with ocean transportation and end use combustion in India are essential in order to assure that purposes of the Act will not be compromised by piecemeal approval of these and other Galilee Basin coal export projects such as the Kevin's Corner/Alpha projects.		Volume 2, Ch 8, section 8.1.2 Volume 3, Ch 8, section 8.1.2 Vol 4, App T, section 1-4, 1-5 Vol 4, App AE, section 1-4, 1-5	The emissions identified by the submission are classified as Scope 3. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The proponent's position expressed in the Kevin's Corner Project SEIS Section 02 p.8-397, that GHGE emissions from ocean transportation and the burning of Galilee Basin sourced coal measures in India "are not attributed to such a project under accepted accounting principles" is fundamentally flawed. Laws of nature pertaining to global warming, rising sea levels, ocean acidification and extreme weather events are not subject to the accounting conventions of The National Greenhouse and Energy Reporting Act.(2007). Assessments of externality costs to Australian communities and marine environmental resources stemming from rising sea levels, ocean acidification and extreme weather events arising from Scope 3 GHGE emissions associated with ocean transportation end use of coal exports are also necessary in this EIS.		Volume 2, Ch 8, section 8.1.2 Volume 3, Ch 8, section 8.1.2 Vol 4, App T, section 1-4, 1-5 Vol 4, App AE, section 1-4, 1-5	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Given the lack of strategic assessments cited above, Asia Pacific Strategy urges the Government's rejection of the Carmichael Mine and Rail Project's EIS and its proposed conditions for approval on the following grounds:		Vol 2, Ch 8 Vol 3, Ch 8 Vol 4, App T and App AE (general)	Comment noted.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The EIS is silent with regard to holistic long run externality costs associated with climate change arising from transport and burning of the coal;		Vol 2, Ch 8 Vol 3, Ch 8 Vol 4, App T and App AE (general)	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Information provided in the EIS is misleading with respect to likely fugitive emissions from proposed open cut mines, and inadequate to set conditions necessaty to advance the purposes of the Act with regard to climate change;		Vol 2, Ch 8 Vol 3, Ch 8 Vol 4, App T and App AE (general)	The emissions identified by the submission are classified as Scope 3. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The Project will cause adverse environmental impacts unless conditions are imposed to avoid, reduce or offset the emissions of greenhouse gases that will result from the mining, transport and intended end use of the coal from the mines;		Vol 2, Ch 8 Vol 3, Ch 8 Vol 4, App T and App AE (general)	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The Project will prejudice the public right and interest unless conditions are imposed to avoid, reduce or offset the emissions of greenhouse gases that will result from the mining, transport and intended end use of the coal from the mines;		Vol 2, Ch 8 Vol 3, Ch 8 Vol 4, App T and App AE (general)	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	There are good reasons to refuse to grant mining leases or to impose conditions, namely, to avoid, reduce or offset the emissions of greenhouse gases that the mining, transport and use of coal exported from the Project will cause to Australia:		Vol 2, Ch 8 Vol 3, Ch 8 Vol 4, App T and App AE (general)	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The Project is not consistent with the principles of ecologically sustainable development due to the contribution that the emissions of greenhouse gases from transport and intended use ofthe coal from the mines will make to global warming;		Vol 2, Ch 8 Vol 3, Ch 8 Vol 4, App T and App AE (general)	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The Project will not comply with best practice environmental management for coal mining unless conditions are imposed to prevent open cut mining and avoid, reduce or offset emissions of greenhouse gases that are likely to result from the mining, transport and use of the coal		Vol 2, Ch 8 Vol 3, Ch 8 Vol 4, App T and App AE (general)	The emissions identified by the submission are classified as Scope 3. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
2	Asia Pacific Strategy	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The Project will not comply with the general environmental duty unless stringent additional conditions are imposed to avoid, reduce or offset the emissions of greenhouse gases that will result from the mining, transport and intended end use of the coal from the mine.		Vol 2, Ch 8 Vol 3, Ch 8 Vol 4, App T and App AE (general)	Noted. The emissions identified by the submission are classified as Scope 3. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.

3	QDHPW	Social	Housing	The proposal for a self-contained workers' camp for the mine component of the project, and for construction camps along the rail line alignment are noted, as is the need to source workers from a wide catchment. Impacts on housing markets may however, occur in regional centres and coastal townships over the medium to long term operational timeframe of the mine due to workers choosing to live closer to regional FIFO centres ("nominated collection points") in order to reduce commuting time and consequential stress on both individuals and their families. Centres in what the SIA identifies as the regional study area, such as Mackay, Bowen and Emerald are already experiencing housing stress due to the cumulative impact of resource projects. This trend is likely to be sustained over the long term.	Adani's commitment in the draft Housing and Accommodation Action Plan to respond to housing and accommodation issues in local and regional communities if required, to liaise with councils and be part of the Clermont Preferred Futures Group is commended. Given the scale and long-term nature of the project, the department recommends that liaison with councils within the regional study area, and monitoring of housing market data and trends, be commenced as early as possible, preferably at pre-construction stage, in order to better understand market trends and impacts over time and to establish sound working relationships with relevant councils and stakeholders. This approach is compatible with the Major Resource Projects Housing Policy, as is the need to take residential location preference of workers into consideration.	Vol 1, 3.3.2, 3.3.3 Vol 4, App G, Draft Action Plan, 3.3 Housing & Accommodation	Comments are noted. SIMP and HIS in SEIS Volume 4 Appendix D2 have been updated to reflect the consultation process to finalise the social impact management strategies. The consultation process includes DHPW as a stakeholder.
3	QDHPW	Social	Housing	Vacancy rates for the centres in the September quarter of 2012 give an indication of pressures already in the rental market; Mackay (1.1%), Emerald (0.5%) and Bowen (0.8%). Vacancy rates of around 3% are considered by the National Housing Supply Council as the industry norm and represent a good balance between demand and supply. While these trends cannot be presently attributable to any particular project, the presence of a major mining operation such as Carmichael Coal over a proposed 90 year period, together with other major projects in the region, will be likely to contribute to housing impact over that time.	Monitoring in this context should be linked to workforce data based on place of residence, and travel/flight journey data to obtain an indication of workforce catchment and workforce residential trends over time.	Vol 1, 3.3.2, 3.3.3 Vol 4, App G, Draft Action Plan, 3.3 Housing & Accommodation	Comments are noted. Monitoring of rental markets within the region is included in the updated SIMP (SEIS Volume 4, Appendix D2 Section 3.4). SIMP and HIS in SEIS Volume 4 Appendix D2 have been updated to reflect the consultation process to finalise the social impact management strategies. The consultation process includes DHPW as a stakeholder.
3	QDHPW	Social	Housing	Reflecting the comments above regarding potential impacts on source communities over the long-term life of the project, the list of stakeholders should also include other councils in the regional study areas that may be impacted.	Stakeholders listed in Table 6.1 of the draft Integrated Housing Strategy, and 3.3 Housing and Accommodation Plan of the draft SIMP should also include Townsville, Charters Towers, Whitsunday, Mackay and Central Highlands Regional Councils.	Draft Integrated Housing Strategy, 6, Management Strategies, Table 6.1: Housing and Accommodation, Stakeholders. Draft Social Impact Management Plan, 3 Draft Action Plans, Monitoring & Reporting, 3.3 Housing & Accommodation, Stakeholders.	Comments are noted. Updated stakeholder list is available in the Integrated Housing Strategy and Housing and Accommodation Strategies of the updated SIMP (SEIS Volume 4 Appendix D2 Section 3.4 and Appendix B).
3	QDHPW	Social	Housing	Table 10-6 has the issue of cumulative impact as "not applicable". The department contends that cumulative impact is a major issue facing regional communities for many sectoral issues, in this case housing impact. While the comparative remoteness of the site and the need for large-scale worker village accommodation is recognised and acknowledged, the assumption that a large FIFO workforce will not have cumulative impact on regional source communities over a 90 year timeframe is unlikely to be valid.	In line with the comments above, this section should include a commitment to ongoing monitoring of the housing market over the medium-to-long-term with regional councils and other stakeholders. Articulating this commitment would also be compatible with Adani's willingness to track demographic changes potentially arising from the project and if adverse impacts appear likely, work with stakeholders to develop mitigation approaches (draft SIMP, 3.3.5, Potential Social Impacts).	Volume 1 Project Wide, Table 10-6 in Section 10, List of Project Commitments; Section 3.3.5 Housing and Accommodation Demand; Section 4 Draft Social Impact Management Plan, Section 8 Cumulative Impacts	Comments are noted and discussions on cumulative impacts is incorporated in SEIS Volume 4, Appendix D1 Sections 7.3 and 8.5 of the SIA, SEIS Volume 4, Appendix D2 Section 3.4 and Appendix B of the SIMP.
4	Liekefett	General Comment	General Comment	Many & varied issues - too many to list all, but principally, destruction of habitat, destruction of cleared land with improved pastures, being a food source for seed-eating fauna	The project (mine) in its present form of application should not proceed. This land was cleared for the reason to provide improved pastures for grazing, not that the improved pastures were to be mined.	Vol 2, Section 4 Land and Section 5 Nature Conservation	Noted. Issues in relation to habitat and agricultural lands are detailed within the EIS and appropriate mitigation measures provided where relevant.
4	Liekefett	Land, Nature Conservation	Bygana West Nature Refuge	The destruction of Bygana West Nature Reserve, and issues with FIFO with reference to Volume 4, as follows: Appendix J - Environmental Issues Appendix N3 - Black-throated finches & fauna in general Appendix H - Offsets Appendix N1 Appendix F - Social impact FIFO	Bygana West Nature Reserve is there for a reason. No mining south of Carmichael River. No Black-throat finch habitat to be mined. Offsets do not replace what was lost. It only shifts the habitat to another area so there is less habitat. This cannot be allowed to happen. The timeframe for the projected life of the Project (Mine) of 90 years is too long to use FIFO work force entirely. The proponents need to establish small town facilities so employees have choice. Other developments are likely to occur - town facilities will be needed.	Vol2, Section 5 Nature Conservation. Vol 1 Section 3 Social Impact Assessment and Section 4 Draft SIMP. Appendices J, H N1, N3 and F	Personal opinion noted.
4	Liekefett	Project - Rail	Land	Matters contained within Appendix Z: 1334 hectares of good quality agricultural land, 115 hectares of strategic cropping land	It is a concern. There is a possibly no solution however the impact must be noted.	Vol 3, Section 4 Land, Section 13 EMP	Comment noted.
4	Liekefett	General Comment	General Comment	As already stated, there are many & varied issues - habitat destruction, environmental, rehabilitation & subsidence issues; many other such matters of concern are portrayed in the EIS.	This Project (Mine) could be partly approved with strict conditions & all recommendations, statements, mitigation measures in relation to operation of the Project, rehabilitation, etc, with conditions outlined in the EIS. The way mining approvals are given, needs to charge planning for mining in environmentally sensitive areas; needs to start many decades before mining is approved. Habitat needs to be developed & maintained to be equivalent to or better than that destroyed before mining approval. The resources from this Project are for a special reason. Any approval given should be in blocks of 20 years. A mine life of 90 years is too long for one approval. A bankable bond of appropriate value should be paid on approval & re-paid in blocks of 20 years in relation to performance. The value of royalties in this area need to be addressed.	Volume 2 Section 4 Land, Section 5 Nature Conservation, Section 13 EMP	Noted. The life of the project has been reviewed as part of updated mine planning.
5	Skills Queensland	Social	Workforce Profile	The Terms of Reference was provided before the inclusion of the Skills Queensland Workforce Profile criteria. However there is a detailed social impact assessment of the local and regional areas which provides a good understanding and evidence for the proponent's workforce proposed actions. The requirement for FIFO workers, the workforce accommodation decisions and theanticipated regional bases for rail operational staff is clearly explained and supported by evidence.		Section 4.4 Workforce Profile	Comments are noted.
5	Skills Queensland	Draft SIMP	WMP	A workforce management plan is identified in the list of action plans.		SIMP 4.5 Action Plans	Comments are noted.

5	Skills Queensland	Social	Workforce Management	Reference is made to an Education and Training Plan to be developed addressing skills shortages and under representative groups. Local and Regional recruitment and training providers will be approached.		Section 7.6 Workforce Management 7.6.1 Overview	Comments are noted. Updates on training programs are provided in the SIA SEIS Volume 4, Appendix D1, Section 8.6 and in the SIMP SEIS Volume 4, Appendix D2, Section 3.5.
5	Skills Queensland	Social	Workforce Management	Proponent has identified the construction workforce will be the responsibility of contractors and their sub-contractors. The contracting strategy is not in place for the operational phase.		7.6.3 Recruitment, Education and Training	Comments are noted and updates to contracting strategy are provided in the SIA SEIS Volume 4, Appendix D1, Section 6.3.2, 8.6.3) and in the SIMP SEIS Volume 4, Appendix D2, Section 3.5.
5	Skills Queensland	Social	Training and Apprenticeships	Skills Queensland understands that with the lag time it is difficult to set training and employment targets or identify more clearly occupational areas that may be a supply issue.	Regardless of whether Adani or contractors are managing the construction or operational workforce a commitment from the proponent on a target to ensure skills development in key occupational and trade areas should be provided. The appropriate time might be at FID or contract allocation	7.6.3 Recruitment, Education and Training	Comments are noted and updates to contracting, recruitment and training strategies are provided in the SIA SEIS Volume 4, Appendix D1, Sections 6.3, 6.4, 8.6.3 and SIMP SEIS Volume 4, Appendix D2, Section 3.5.
5	Skills Queensland	Social	Workforce Management	The proponent has identified: • a focus on programs for recruitment of existing skilled workers from throughout Queensland and Australia • a new entrant program, specifically designed for those with no prior experience in the mining industry • a commitment to work on a further workforce management plan with Skills Queensland • good detail in the workforce numbers across construction, operational and rail construction and operational; • an existing collaboration is in place with Whitsunday Industry Workforce Development Group (WIWD) and Clermont Preferred Futures for six apprentices (4 of these will hopefully be taken up by Indigenous job seekers); • general strategies to retain new entrants and specifically underrepresented groups in the mining sector, such as women, Indigenous and people with a disability; • that only a small number of highly skilled overseas workers would be requirement in the construction phase with no anticipated need for overseas workers in the operational area; and • a training facility at the mine site is a possible strategy at a later date.	Recommendations • Completion of the Workforce Data Template at FID or the awarding of contracts providing a further breakdown ofthe identification of those occupational areas where recruitment and supply is anticipated to be an issue. Any supply issues should also have strategies for their future development within the workforce management plan. • Contact with the FIFO coordinators in Cairns, Gold Coast and Wide Bay when developing strategies for recruitment and training for job seekers. • Clarification within the Workforce Management Plan of the 6 apprentices and traineesas to the actual trade areas, whether these are Adani or contractor apprentices and whether the target could increase over time. • Continued collaboration with Skills Queensland and the Department of Education, Training and Employment in the development of the Workforce Management Plan.	7.6.3 Recruitment, Education and Training	Comments are noted and updates are reflected in the SIA (SEIS Volume 4, Appendix D1, Section 8.6.3 and SIMP SEIS Volume 4, Appendix D2, Section 3.5.
6	Jones	Land	Land Use and Tenure	The construction of a fenced rail corridor along the proposed alignment, Figure 1 will sever the land into the main parcel of land and a smaller parcel in the south-east corner ("the severed parcel"). The projected life of the Carmichael Mine is 90 Years		Vol 1, Section 3.3.7 Landholders and Amenity; Vol 3 Section 4.4 Land Use and Tenure	Comments regarding the severance of land parcels is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W draft EMP - Rail). SIA and SIMP updated with details of landholder consultation, refer to SEIS Volume 4 Appendix D1 and D2.
6	Jones	Land	Land Use and Tenure	We require access over the rail corridor within the boundaries of the property to provide access to the severed parcel. If we are not able to have continuous access over the rail corridor, then the severed parcel will become completely separated from the balance ofthe land and will have virtually no value for the following reasons: (a) There is no permanent natural water on the severed parcel. (b) Without an access over the rail corridor for machinery and livestock, it will not be possible to access the severed parcel.		Vol 1, Section 3.3.7 Landholders and Amenity; Vol 3 Section 4.4 Land Use and Tenure	Comments regarding the severance of land parcels is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W draft EMP - Rail). SIA and SIMP were updated with details of landholder consultation, refer to SEIS Volume 4 Appendix D1 and D2.
6	Jones	Social	Land holders and amenity	The construction of a rail corridor through the land will have a substantial negative impact on the amenity of the locality and the grazing activities which are conducted on the land. These effects will be caused by: (a) Noise and movement from construction. (b) Noise and disturbance from the movement of rail traffic and service vehicles along the corridor. (i)Cattle are moved from paddock to paddock as they mature. There will always be new introduced cattle near the rail corridor.		Vol 1, Section 3.3.7 Landholders and Amenity; Vol 3 Section 4.4 Land Use and Tenure; Section 6.1 Water Resources Hydrology; Section 13 Draft EMP	Impacts on the amenity of the locality and the grazing activities which are conducted on the land are assessed in SIA SEIS Volume 4, Section 7.7 and addressed in SIMP SEIS Volume 4, Appendix D2, Section 3.2 and 3.3. Also referred to EIS Volume 3 Section 9 (Noise and Vibration).
6	Jones	Climate, Natural Hazards and Climate Change	Flooding	(c) The natural overland flow of water will be impeded by the earth embankment on which the rail track is constructed. This will cause inundation and erosion of the land. (i) Diamond Creek is a shallow creek with wide flood plains. Project maps do not show Diamond Creek correctly as it becomes a flood plain. Sullivan Creek is not shown correctly, Figure 1. (ii) 6. Water Resources 6.1 Hydrology Hancock Coal Pty Ltd's new Hydrology Flood Report by Calibre 16 Nov. 2011, (requested by Coordinator General) shows Logan Creek to the south, flowing overland to Diamond Creek crossing the rail corridor. GVK Hancock Coal's rail corridor intersects/overpasses this rail corridor near Diamond Creek, Figure 1. (d) The deposition of coal dust on the adjoining lands and water systems during the carting of coal along the corridor. (e) Increased risk of fire because of the activities in the rail corridor. In the case of fire it is the landholder adjacent to the line and the local rural fire brigade who have to control the fires. The adjacent landholder will have increased responsibility of maintaining fire breaks along the corridor.		Vol 1, Section 3.3.7 Landholders and Amenity; Vol 3 Section 3.2.3 Natural or Induced Hazards, Section 3.3.2 Flood Management, Section 4.4 Land Use and Tenure; Section 6.1 Water Resources Hydrology; Section 13 Draft EMP; Vol 4 App AB Rail Hydrology.	(c) The impact of flooding on existing properties is noted. Detailed flood modelling has been undertaken and has been included in the included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). This also further discussed in Section 4.3.8 of the SEIS Volume 3, Rail studies. (d) Further assessment, avoidance and mitigation measures for the potential impact of coal dust deposition on adjoining land, water quality and grazing activities has been included within the draft EMP. (e) Comments regarding increased fire risk due to rail activities has been noted. Adani has developed a Rail Safety Procedure (AD-RSM-PRO-022.5, April 2013) to address the risk of fires, please refer to SEIS Volume 4, Appendix S2 for a copy of the procedure. Adani's Hydrology Project Design Criteria (Section 2.4 of Appendix S1) stipulates the following: "Any increase in duration (modelled) of flooding inundation is not to exceed an average across the modelled extent of 72 hours or 20% (whichever is greater) of existing inundation durations during the 50 year ARI event. This is unless specific circumstances where inundation durations post-development can be tolerated in conjunction with landholder agreement. Inundation durations shall be measured from when the water depth is greater than 300mm on the rising limb of the hydrograph to when the water depth is equal to 300mm on the falling limb of the hydrograph." Adani will undertake the flood inundation duration modelling at the detailed design phase. SIA and SIMP updated with details of landholder consultation, refer to SEIS Volume 4 Appendix D1 and D2.

6	Jones	Land	Land Use and Tenure	The property is in the Burdekin Dry Tropics region. We have to have an ERMP accredited by the Department of Environment and Resource Management. The rail corridor will introduce new environment issues that we will have no control over but as the landholder adjacent to the rail corridor will be required to address.		Vol 1 Section 3.3.7 Landholders and Amenity; Vol 3 Section 4.4 Land Use; Section 13 Draft EMP	Ongoing consultation between land holders and Adani regarding specific management measures within ERMPs will be undertaken and where appropriate included within the draft EMP for the Project (Rail) (refer to SEIS Volume 4 Appendix W draft EMP - Rail). The commitment to consultation has been added to SEIS Volume 4, Appendix G Project Commitments Register. Also SIA and SIMP updated with details of landholder consultation, refer to SEIS Volume 4 Appendix D1 and D2.
6	Jones	Hazard and Risk	Roads and Traffic	The workforce and materials for the rail corridor will increase the traffic on the local council roads adjacent to the rail corridor. Contractors and subcontractors will be travelling these roads at all hours to service the construction of the line and to access the temporary accommodation villages.		Vol 1 Section 3.3.6 Roads Traffic and Safety; Section 3.3.7 Landholders and Amenity; Section 3.3.9 Community Values and Change; Volume 11 Transport; Volume 12.2 Project (Rail) Hazards and Risks	Comments regarding road traffic are noted. Traffic impacts have been assessed further in SEIS Volume 4 Appendix P Traffic Impact Assessment.
6	Jones	Social	Community values and change	(a)This increase in persons will bring with it the need to increase security on our property. We will have to also satisfy insurance companies' guidelines. (i) Our local rural fire brigade was called to an accident in the area where the incident could have set a light the side of the road. An increase in accidents in this area has involved the increase in workers driving through to Moranbah. (ii) A neighbour in this area whose buildings are close to the local road has had an increase in disturbance since the increase of through traffic to Moranbah. (iii) The workers accommodation villages usually have rules and regulations governing workers while in camp but these stop at the camp gate. (iv) Persons become familiar with the local lay of the land and property entrances. A lot of disturbances are not reported to the police as sometimes evidence and knowledge of the perpetrator are minimal. These do not show in crime statistics.		Vol 1 Section 3.3.6 Roads Traffic and Safety; Section 3.3.7 Landholders and Amenity; Section 3.3.9 Community Values and Change; Volume 11 Transport; Volume 12.2 Project (Rail) Hazards and Risks	Impacts on community values and changes, fire risks, increased traffic on local roads and workforce behaviour are assessed in SIA SEIS Volume 4, Appendix D1, Sections 7.7, 7.8, 7.9, 8.8, 8.9 and addressed in SIMP SEIS Volume 4, Appendix D2, Sections 3.7, 3.8, 3.9 and further referred to EIS Volume 2 Section 12 and Volume 3 Section 12 (Hazard and Risk).
6	Jones	Nature Conservation	Koalas	Contact was made with GHD at a community meeting and made mention of sightings of Koalas on our property. The investigational contractors made no contact with us to see if we wished to contribute to the EIS study. The contractors only entered DC 98 lot 8 and SP125740 lot 5 on the same day and did not set up traps etc. on the properties. It is known in the community that Koalas are found along the Logan and Diamond Creek systems. (a) There is a colony of koalas on Diamond Creek on Avon Downs, downstream from our properties and downstream from the rail corridor. (b) We had two sightings in 2008, marked on Figure 5-12. This was during a dry period in August. We presumed the koalas moved upstream in search of food along the creek as their food source species is only found along the creeks in our area. Note GVK Hancock Rail Corridor. (c) There is a large lagoon, natural and man-made on Lamming Lagoon downstream of the rail corridor but upstream of the GVK Hancock Rail Line and the large Koala colony. Google Earth clearly shows this lagoon on Diamond Creek.		Vol 3 Section 5 Nature Conservation; Commonwealth Listed Threatened Fauna, Koala Page 5 - 114	The revised MNES Report (SEIS Volume 4, Appendix H) has included further detail on the description of potential impacts upon koala and mitigation proposals with respect to corridors to counter isolation effects. Fauna Crossings will consider Koala requirements, these are discussed in SEIS Volume 4 Appendix U.
6	Jones	Nature Conservation	Koalas	(d) We had no contact with the GVK Hancock investigational team as the line runs along our western boundary, crossing DC98 lot 8 's top corner. I did note that the Federal Minister did not have Koalas on his mammal list. An email was sent to the Fed Gov.		Vol 3 Section 5 Nature Conservation; Commonwealth Listed Threatened Fauna, Koala Page 5 - 114	Personal opinion noted.
6	Jones	Nature Conservation	Koalas	Habitat loss and degradation is an issue along the proposed rail corridor, Figure 5-12.	There should be more investigations and supervision carried out during construction to minimise impact. Koala corridors should be built along the rail corridor with reference to Figure 5-12 as the rail corridor will further isolate the colonies.	Vol 3 Section 5 Nature Conservation; Commonwealth Listed Threatened Fauna, Koala Page 5 - 114; Section 13 Draft EMP; Vol 1 Section 11 MNES	The revised MNES chapter (SEIS Volume 1, Section 11) has included further detail on the description of potential impacts upon koala and mitigation proposals with respect to corridors to counter isolation effects. Fauna Crossings will consider Koala requirements, these are discussed in SEIS Volume 4 Appendix U.
6	Jones	General Comment	General Comment	We have now been informed by Adani that their second proposed rail corridor from Diamond Creek is a preferred line. We will be putting in another submission concerning this corridor, as it does not follow any property boundaries. Therefore bisecting properties in this district which is made up of a pocket of smaller freehold properties formally part of the Government Brigalow Scheme. There will be a larger impact on Homesteads, property management, improvements and water resources.			Noted. Comments in regard to other projects will be responded to in accordance with assessment processes.

7	Fordyce	Climate, Natural Hazards and Climate Change	Flooding	Flooding	This report does not highlight the gentle slope of this river system and how slowly it flows compared to other river systems. The water recedes very slowly. The report discusses water subsiding in weeks. I know the Suttor River system almost flowed for 12 months over 2011/12. This will further exacerbate ponding. To avoid these flooding issues the railway line should be built in a north/south direction west of the Belyando flood plain and then take an easterly direction towards Mt Coolon.	Vol 1, Section 3.3.7 Landholders and Amenity; Vol 3 Section 3.2.3 Natural or Induced Hazards, Section 3.3.2 Flood Management, Section 4.4 Land Use and Tenure; Section 6.1 Water Resources Hydrology; Section 13 Draft EMP; Vol 4 App AB Rail Hydrology.	Comments regarding ponding and flooding from the development and operation of the railway have been noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). This also further discussed in Section 4.3.8 of the SEIS Volume 3, Rail studies. Adani's Hydrology Project Design Criteria (Section 2.4 of Appendix) stipulate the following: "Any increase in duration (modelled) of flooding inundation is not to exceed an average across the modelled extent of 72 hours or 20% (whichever is greater) of existing inundation durations during the 50 year ARI event. This is unless specific circumstances where inundation durations post-development can be tolerated in conjunction with landholder agreement. Inundation durations shall be measured from when the water depth is greater than 300mm on the rising limb of the hydrograph to when the water depth is equal to 300mm on the falling limb of the hydrograph." Adani will undertake the flood inundation duration modelling at the detailed design phase. SIA and SIMP updated with details of landholder consultation, refer to SEIS Volume 4 Appendix D1 and D2.
7	Fordyce	Hazard and risk	Bushfires	Bushfires: Low to medium risk of occurring on or adjacent to this corridor	This needs changing to a High risk. For example the approximate 11Km of railway line proposed to go through "Mabbin" station. In 2011 this property experienced a fire that would have included at least half this proposed corridor, and in 2009 the other half would have burnt as well. This report does not include that grazing businesses burn on a regular basis to control woody weed problems. This corridor goes through Queensland's most prolific buffel grass growing areas. In the dry season this grass is an abundant fuel and it will cause intense, rapid and highly dangerous fires. Sparks from steel railway wheels will start fires without question along this corridor. In December 2012 the "Moray" men's camp experienced a bushfire that burnt 60 000 acres which needed to be evacuated. Fires are a real problem for the entirety of this corridor and should not be underestimated, especially for the impacts on grazing businesses.	Vol 1, Section 3.3.7 Landholders and Amenity; Vol 3 Section 3.2.3 Natural or Induced Hazards, Section 4.4 Land Use and Tenure; Section 13 Draft EMP	The Bushfire Risk Analysis map prepared in June 2008 for Isaac Regional Council by the Queensland Fire and Rescue Service (QFRS) indicated the Project (Rail) area was classified as having a low to medium bushfire hazard refer to (EIS Volume 3 Section 3 Hazard and Risk). Adani has developed a Rail Safety Bushfire Management Plan (AD-RSM-PLN-022.1, April 2013) to address the risk of Bushfires, please refer to SEIS Volume 4, Appendix S2 for a copy of the procedure.
7	Fordyce	Hazard and Risk	Climate	Summary of Potential Climate Risks	Intense rainfall events may mobilise ballast or rail material. The concern here is for the blocking of drainage. There should also be mention of the damage these materials will do to the adjacent grazing land which will occur given the corridor is only 9Sm wide. They are concerned about the ponding of water causing the swelling of clay soils. The ponding of water will also kill valuable grazing vegetation. Mention of the DEEDI study states buffel grass will die after 5 days of submersion, but the longer the ponding occurs the less chance seedlings will have of striking. Bushfire, says landholders are to maintain and manage firebreaks. How about Adani maintain and manage the firebreaks? Fires burn fences, damage wire, burn livestock, melt poly pipe. If the railway line begins the fire, graziers must be compensated.	Vol 1, Section 3.3.7 Landholders and Amenity; Vol 3 Section 3.2.3 Natural or Induced Hazards, Section 3.3.2 Flood Management, Section 4.4 Land Use and Tenure; Section 6.1 Water Resources Hydrology; Section 13 Draft EMP	Comments regarding fire management have been noted. Management of firebreaks has been detailed a Rail Safety Bushfire Management Plan (AD-RSM-PLN-022.1, April 2013) to address the risk of Bushfires, please refer to SEIS Volume 4 Appendix S2 for a copy of the procedure. Management and control measures are also provided in Appendix W Environmental Management Plan - Rail.
7	Fordyce	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Greenhouse Gas Emissions Report	India and Australia share the same planet. How is it that India is allowed to take Australian coal and belch it into our global atmosphere.	Appendix AE	Noted.
7	Fordyce	Project - Rail	Rail alignment	Figure 1.1 Shows Project Location: This map does not show the proposed line going through Myra, Mallawa, Wyena, Mabbin, Nibbereena, Kimberely and Denham Park Stations.		Figure 1.1	This comment relates to the proposed Northern Galilee Basin Rail project which is subject to a separate EIS assessment process.
7	Fordyce	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Australia is committed to reducing its Greenhouse gas emissions??? Really??? How interesting. Why are they letting an Indian company take our Australian coal over to their substandard coal fired power stations, and contribute to the warming of the planet? Oh that's right we've sold the coal to India, so they are no longer our emissions, but India's emissions. How is it we all share the planet and Australia is going to save the planet by reducing its green house gas emissions but they're allowing India to take our coal and warm the planet?? Oh ... and we have to pay a carbon tax too. Maybe that is to overcome all those exported coal emissions. We're primary producers. We rely on the weather more greatly than any other industry. The extremes in the weather conditions are of great concern to our industry.	How about we scrap selling our coal overseas, especially to India and China ..... who have signed the Kyoto agreement ..... but wait ..... don't have to do anything about their emissions until they've completely polluted the whole planet. You've got to be kidding .... a coal mine submitting a Greenhouse Gas Emissions Report. Somewhat of a contradiction don't you think?	App AE Section 1.2	Noted.
7	Fordyce	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Key Project (Rail) Activities Assessed	How about you worry less about the vegetation removal and diesel usage and worry more about the 60 million tonne of thermal coal going to India per year and the damage that is going to do to our global environment. Don't let any foreign countries buy our coal unless their coal fired power stations are up to standard, better still, tell them to use renewable energy!	App AE Table 1-3 Key Project (Rail) Activities Assessed	Noted.
7	Fordyce	Project - Rail	Rail alignment	Green House Report - This map contradicts the information we have been given about the pathway the railway line is going to take. Is this false information or have we been mucked around with the access agreement for no reason at all?		App AE Maps pages 17	This comment relates to the proposed Northern Galilee Basin Rail project which is subject to a separate EIS assessment process.
7	Fordyce	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Potential Mitigation Measures - Overview Here is a list of the effects of Climate Change and you're going to let a foreign country take our coal and contribute to the problem.		App AE Section 3.1 Potential Mitigation Measures	Noted.
7	Fordyce	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Offset Measures	How about you forget about the carbon permits, monitoring fuel consumption, and worry about the 60 million tonnes of coal going to India and the carbon footprint it is going to create for the planet.	App AE Section 3.2.4 Offset Measures	Noted.

7	Fordyce	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Planning and Avoidance	Forget the anti-idling software & bio fuels and worry about how Adani's Coal Fired powerstaion technology.	App AE Section 3.3.2 Planning and Avoidance	Noted.
7	Fordyce	Transport	Roads and Traffic	Traffic volume Increased maintenance requirements on local roads. The report states relatively low volumes of traffic on local roads. Yes ,this may be the case but if Adani think they have the right to come in and destroy our local roads think again. Our livelihood depends on the maintenance of these roads. The Suttor development road is a good example of this where local businesses where disadvantaged during the construction of the missing link project.	How about Adani upgrade roads most adjacent to the proposed corridor to bitumen standard before any rail construction starts and that will go some way to compensating local businesses for all the inconveniences of this project. After all it is these local businesses that have paid the local councils the rates. For example they could bitumen 13km of the Mabbin Road, relieving the IRC and Main Roads.	Vol 3 Section 11.2.2.4 Vol 1 Section 3.3.6 Roads, Traffic and Safety Table 3.7	Comment regarding road maintenance and upgrades prior to construction of the rail corridor is noted. Details regarding road upgrades and maintenance have been outlined in the Traffic Impact Assessment t undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). Adani is currently in discussions with IRC to draft an infrastructure agreement regarding the long term maintenance and development of impacted local roads.
7	Fordyce	Social	Land holders and amenity	There is no mention of the problems of paddock gates being left open, or the damage to poly pipe and watering points. Cattle disturbance is only one component of our business.		Vol 1 Section 3.3.7 Land Holders and Amenity, Paragraph 4; Vol 3 Section 4.4 Land Use and Tenure; Section 13 draft EMP	Comments are noted and addressed in the SIA SEIS Volume 4, Appendix D1 Sections 7.7, 8.3 and SIMP SEIS Volume 4, Appendix D2 Section 3.3.
7	Fordyce	Land	scenic amenity	Paragraph 5 minimal impacts on visual amenity - From the house verandah we look out over a beautiful buffel paddock with the cattle grazing. This paddock will be intersected by the corridor. The minimal visual impact is Adane's opinion. What about the landholder's opinion.	This needs to be changed to a MAJOR visual and noise impact.	Vol 1 Section 3.3.7 Paragraph 5; Vol 3 Section 4.1 Scenic Amenity and Lighting	The Fordyce property is not traversed by the Rail corridor.
7	Fordyce	Land	Land Use and Tenure	Paragraph 7 ponding and flooding - Even though Adani assures that adequate pipes will overcome ponding and flooding, we want to know who will move the obstructions (silt, logs) to these pipes after a flooding event to allow the water to flow through.		Vol 1 Section 3.3.7 Paragraph 7; Vol 3 Section 3.2.3 Natural or Induced Hazards, Section 3.3.2 Flood Management, Vol 3 Section 4.4 Land Use and Tenure; Section 6.1 Water Resources Hydrology; Section 13 Draft EMP; Vol 4 App AB Rail Hydrology.	Ongoing consultation will be undertaken between Adani and affected landholders regarding flood modelling and flood impacts. The removal of obstructions after flooding has been included within the Projects draft EMPs (refer to SEIS Volume 4 Appendix W EMP - Rail). Routine maintenance of the rail corridor will also include the ensuring the free operation of all drainage structures, including removal of obstructions where required, during construction and operation. This commitment is provided in SEIS Volume 4, Appendix G Project Commitments Register.
7	Fordyce	Hazard and risk	Bushfires	Paragraph 8 fire - This speaks about Adani avoiding starting the fires but expects the landholders to put the fire out.	Adani must contribute to the containment of the fire also.	Vol 1, Section 3.3.7 Landholders and Amenity; Vol 3 Section 3.2.3 Natural or Induced Hazards, Section 4.4 Land Use and Tenure; Section 13 Draft EMP	Adani has developed a Rail Safety Bushfire Management Plan (AD-RSM-PLN-022.1, April 2013) to address the risk of Bushfires, please refer to SEIS Volume 4 Appendix S2 for a copy of the procedure. Adani has made arrangements for the provision of emergency services at the Mine Workers Accommodation Village and Industrial Area. These services will be used to respond to and contain fires, where required. Additional response procedures, trained personnel and emergency equipment will be established to address all foreseeable emergency risks during the construction phase of the project.
7	Fordyce	Social	Land holders and amenity	Table Disruption to cattle operations - The consequence is not minor but MAJOR. During the exploratory phase Adani's mere presence was a MAJOR disturbance to our business and personal lives. We run an excellent business. Why should we stop our business to help the business of Adani? Would they stop their business to help ours?	Adani cannot benefit from our infrastructure without contributing to the local road construction.	Vol 1, Section 3.3.7 (table 8) Landholders and Amenity; Vol 3 Section 4.4 Land Use and Tenure; Section 13 Draft EMP	Appropriate land access protocols and landholder engagement processes are in place, these are stated in the SIA SEIS Volume 4 Appendix D1 Sections 8.3, 8.4 and SIMP SEIS Volume 4 Appendix D2 Section 3.3, 4. These protocols and processes will be developed and applied (where relevant) from the pre-construction phase.
7	Fordyce	Social	consultation	Invitations were sent to all affected landholders to participate in case studies - This paragraph states only one landholder responded to this case study. As an affected landholder I have no record of this invitation which makes me wonder how hard Adani tried to gain this information from affected landholders.	This EIS should not go through until all landholders give information to the case study	3.1.4 Table 3.1	An invitation to participate in the SIA case study was sent to the submitter on 14 October 2011. A follow up phone call was made on 2 November 2011. The submitter responded saying they were not interested in participating.
7	Fordyce	Land	Land use and tenure	Paragraph 3 health issues regarding dust and noise pollution - This paragraph concentrates on human health, but the implications of the dust on the grass growth, and consequently to the cattle's health is not mentioned. When driving along the rail corridor at Oxford Downs on the Peak Downs highway, coal dust billows from the trains all over the adjacent surroundings, particularly on windy days. Upon close inspection the grass is coated with coal dust. Not a palatable meal for cattle.		Vol 1, Section 3.3.7 (paragraph 3) Landholders and Amenity; Vol 3 Section 4.4 Land Use and Tenure; Section 13 Draft EMP	Comments regarding coal dust on grass and cattle health is noted. Mitigation and management measures have been identified to manage the dust emissions from the rail corridor (refer to SEIS Volume 4 Appendix W draft EMP - Rail). This also further discussed in Section 4.3.8 of the SEIS Volume 3, Rail studies.
7	Fordyce	Land	Land use and tenure	Paragraph 2 rail crossings for cattle - We have built both cattle yards and fences to encourage the natural flow of the cattle's movements. Often despite our best efforts cattle are reluctant to move though built gate ways. Often this requires us to move a fence or gateway to overcome this problem. What happens if despite trying to negotiate the best type of cattle crossing with Adani it doesn't work? Then we're stuck with a bad crossing that makes our business very difficult to operate.	I don't imagine Adani will reconfigure a crossing that doesn't work for us, but they should because cattle are our business.	Vol 1, Section 3.3.7 (paragraph 2) Landholders and Amenity; Vol 3 Section 4.4 Land Use and Tenure; Section 13 Draft EMP	Ongoing consultation with land holders regarding cattle management on railway crossings will be undertaken. This will include consultation during detailed design activities to facilitate appropriate design of crossings. This also further discussed in Section 4.3.8 of the SEIS Volume 3, Rail studies. SIA and SIMP were updated with details of landholder consultation, refer to SEIS Volume 4 Appendix D1 and D2.
8	QDSDIP Regional	Economics	Regional Economies	6.2.4 States that "Charters Towers and Mackay have not been affected by the same price spikes recording a median of $237 000". This does not appear to be correct. REDC MIW Regional Economic Profile (March 2012) states that for the September Qtr 2011 the medium house price in Mackay was $410 000.	Review statement in light of information provided by REDC MIW Regional Economic Profile	Vol 1 Section 6 Economies Section 6.2.4 Page 6-3	Comments are noted.

8	QDSDIP Regional	Social	Workforce Management	12.1.1 Commits to the "Development of a Workforce Management Plan that seeks to employ people initially from the region, Queensland and the rest of Australia before seeking overseas workers". Page 17 of the Social Impact Assessment (Section 3:3:4) states that "until road infrastructure is improved, opportunities for residents from the Isaac or Charters Towers areas to gain employment at the proposed mine on a DIDO basis are likely to be limited". Page 15 of the Social Impact Assessment (Section 3:3:2) states that "almost all workers will be recruited on a FIFO basis, flying in and out of one or more nominated collection points in population centres on the east coast of Queensland". This does not appear to align with the commitment to develop a plan to employ people initially from the region.	The option of using the Whitsunday airports to provide opportunity for regional participation in the workforce be explored.	Vol 1 Section 12 Conclusions and Recommendations Section 12:1:1 Page 12-1	As addressed in the EIS, Adani proposes to utilise a FIFO operations workforce due to its remote location and to minimise the potential impact of the Project on regional communities (such as increased housing prices). FIFO operations will fly between nominated collection points along the east coast to the private airstrip located within the offsite infrastructure area. Optimal collection points for FIFO will be determined after full consideration to skilled workforce availability in the immediate vicinity of airports, airport capacity and flight schedule performance, surrounding infrastructure such as public transport, parking and training facilities to ensure long term efficient and reliable transit for workers. Adani is committed to considering DIDO or BIBO arrangements out of regional centres including Clermont, Emerald and Charters Towers once road infrastructure is improved. Considering the potential traffic volumes, reliable all-weather access roads are required, including between the Gregory Developmental Road and the Project (Mine) site. Refer to SIA SEIS Volume 4 Appendix D1 Sections 6.4, 6.4, 7.4, 8.6 and SIMP SEIS Volume 4 Appendix D1 Section 3.5
8	QDSDIP Regional	Social	Workforce Management	It is acknowledged that the decision to have a FIFO workforce has been made partially to mitigate the potential negative impact on housing costs and services in surrounding communities. While sourcing the workforce elsewhere may be seen to be of benefit to some areas within the Isaac LGA, this is not the case in the nearby Whitsunday LGA. The Whitsunday Regional Council have been involved in a number of initiatives to promote the area as a FIFO base. For example, "Living Whitsundays" is an initiative that was developed by local and state government and private sector stakeholders to attract new residents to the Whitsunday LGA, including potential mine employees.		12 Conclusions and Recommendations Section 12:1:1 Page 12-1	Adani proposes to utilise a FIFO workforce due to the remote location of the Project. Optimal collection points for FIFO will be determined after full consideration to skilled workforce availability in the immediate vicinity of airports, airport capacity and flight schedule performance, surrounding infrastructure such as public transport, parking and training facilities to ensure long term efficient and reliable transit for workers. It is proposed that the rail operations workforce will be located in Bowen in Whitsunday LGA. Refer to SIA SEIS Volume 4 Appendix D1 Sections 6.4, 6.4, 7.4, 8.6 and SIMP SEIS Volume 4 Appendix D1 Section 3.5
9	QDSDIP Resource Sector Facilitation	Social	LIPP	The Section sufficiently addresses the requirements for Local Industry Participation Plans (LIPPs)	No further comment	7.7 Local Industry Participation Plan	Comments are noted.
10	Bell	Cumulative Impacts	Vegetation clearing	Concerns about clearing of Brigalow TEC. The loss of 1% of this already severely depleted community is very significant. Viewing this loss in the light of other coal projects planned for the Galilee Basin makes the impact even greater.	Reject the proposal or required re-routing of the rail line to avoid or substantially reduce impacts on Brigalow TEC.	General 08 (Cumulative Impacts) & Rail Chapters 05 (Nature Conservation)	Adani has undertaken additional ecological investigations as part of the SEIS process. Please refer to SEIS Volume 4, Appendices H (Revised MNES Report, J1 (Revised Mine Ecology Report), J5 (Offsite infrastructure Ecological Assessment Report).
10	Bell	Water Resources	Groundwater	Concern about impact of groundwater harvesting on regional water patterns, including downstream impacts on the Carmichael River.	Reject the proposal, greatly reduce its scale, or require best practice water re-use to avoid drain on groundwater.	Mine Chapters 06 (Water Resources)	Adani has undertaken additional groundwater investigations and modelling to inform the potential impacts on groundwater from the project. Adani has also commenced its groundwater monitoring program to better understand the hydrogeology in the area. Please refer to SEIS Volume 4, Appendix K1 Revised Mine Hydrogeology Report for further information.
11	Goodman	Nature Conservation	General Comment	Land clearing			Insufficient information to support detailed response.
11	Goodman	Water Resources	General Comment	Water use			No response required.
11	Goodman	Greenhouse Gas Emissions	General Comment	CO2 Impacts contribute to climate change			Comment noted.
11	Goodman	Nature Conservation	General Comment	Threatened Species			Insufficient information to support detailed response.
12	Ellett	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The study fails to consider the full lifecycle of the product, such as what happens to the product once it is exported. The Great Barrier Reef is threatened as much by the increased sea traffic as by the runoff and other pollutants. Exporting additional coal will add to the world's greenhouse gas emissions, which exacerbates harmful climate change to which Australia is especially vulnerable. That Australia is the world's largest exporter of coal (the use of which has known harmful effects, but to which society is addicted) is akin to Australia being a drug baron. As a nation, and as organisations, we are morally obliged to accept responsibility and do what we can to not make the situation worse	Rewrite the EIS to follow the product from extraction all the way to disposal. Since all nations are impacted, including the vulnerable island states, representatives from all these stakeholders should review the EIS. Until a new EIS is written and assessed, stop all plans for additional coal mines.	Vol1, Executive Summary but especially E.9. And E.10.6	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
13	Maud	Greenhouse Gas Emissions	Greenhouse Gas Emissions	I note that the EIS executive summary puts the cumulative impacts of this mine concerning greenhouse gas emissions as "low risk". Surely cumulative impacts must include the use the coal is to be put to, in this case almost certainly electricity generation. The mine will be capable of producing 60 million tonnes of coal annually and could have a 90 year lifespan. At this production the coal from this mine, burnt for electricity generation, would be adding more than 120 million tonnes of carbon dioxide to the atmosphere annually - according to Greenpeace research more than the 2009 carbon dioxide emissions from fuel combution in Sweden, Norway and Denmark combined.		Vol 1 Executive Summary	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.

14	Chalk and Fitzgerald, Lawyers and Consultants	Nature Conservation	Offsets	Use of Moray Downs for Environmental Offsets Strategy: Potential Native Title Issues. We write on behalf of the Wang an & Jagalingou native title claimants (W&J Claimants) regarding the Environmental Impact Statement (the EIS) prepar:ed by Adani Pty Ltd (Adani) for the proposed Carmichael Coal Mine and Rail Project (the Project) in central Queensland. The W&J Claimants are the registered native title claimants (Native Title Claim QUD 85/04) over an area of land in central Queensland identified in the map at Attachment A. The mining lease application relevant to the Project (ML 70441) is contained within the geographic scope of this claim as is clear from the map at Attachment B. In addition, a significant portion of the Moray Downs property (Moray Downs) - a pastoral holding under a term lease (LOT # 662 PH1491) - exists with the geographic scope of the W&J's registered native title claim (see map at Attachment C).		Vol 4 Appendix AH: Environmental Offsets Strategy (See also Draft Offsets Strategy: Project Wide: Chapter 09)	Adani has provided an updated Offsets Strategy in the SEIS (Volume 4 Appendix F). Offset acquisition will be in accordance with State and Commonwealth policy requirements and will consider land tenure and other legislative requirements also. This may or may not include the Moray Downs property as an Offset.
14	Chalk and Fitzgerald, Lawyers and Consultants	Nature Conservation	Offsets	This submission relates to the potential intersection of matters identified or proposed within the EIS, and the rights and interests presently the subject of the W&J Claimants' registered native title claim. Specifically, we refer to an environmental offsets strategy and quarry proposed at Moray Downs.		Vol 4 Appendix AH: Environmental Offsets Strategy (See also Draft Offsets Strategy: Project Wide: Chapter 09)	Adani has provided an updated Offsets Strategy in the SEIS (Volume 4 Appendix F). Offset acquisition will be in accordance with State and Commonwealth policy requirements and will consider land tenure and other legislative requirements also. This may or may not include the Moray Downs property as an Offset.
14	Chalk and Fitzgerald, Lawyers and Consultants	Nature Conservation	Offsets	Appendix AH of the EIS describes the Environmental Offsets Strategy (Offsets Strategy). The Offsets Strategy sets out a proposal to directly offset the environmental impacts of the Project. The Offsets Strategy provides for the conservation of environmental values, listed under the Environment Protection and Biodiversity Conservation Act 1999 (Cth), the Nature Conservation Act 1992 (Qld) and the Vegetation Management Act 1999 (Qld) at various locations on Moray Downs. Appendix AH sets out a timetable of tasks required for delivery of the Offsets Strategy. One such task involves 'the application of a legally binding mechanism to secure the environmental values of the offset area in perpetuity'.	Adani will need to ensure that it holds secure and appropriate tenure in order to implement the Offsets Strategy.	Vol 4 Appendix AH: Environmental Offsets Strategy; Section 1.1 Background	Please refer to Adani's Revised Offset Strategy Report in SEIS Volume 4, Appendix F.
14	Chalk and Fitzgerald, Lawyers and Consultants	General comment	General Comment	Adani currently holds a term lease issued for pastoral purposes over Moray Downs. Section 199A(2) of the Land Act 1994 (Qld) (Land Act) explicitly provides that 'a term lease for pastoral purposes must be used only for agricultural or grazing purposes, or both'. Use of Moray Downs for the purpose of environmental offsets will therefore require the Queensland Government to either:	i. formally alter the terms of the lease so as to make permissible forms of land use for additional, non-pastoral, purposes - an act contingent upon the extent to which the additional purpose is 'complementary to, and does not interfere with, the purpose for which the lease was originally issued' (the first scenario); or ii. convert the property to another form of tenure (either perpetual lease or freehold title) so as to ensure the valid application of the mechanism to be used for offsetting (the second scenario).	Vol 4 Appendix AH: Environmental Offsets Strategy	Comment noted.
14	Chalk and Fitzgerald, Lawyers and Consultants	General comment	General Comment	In the **first scenario**, the legality of Moray Downs being used for the additional purpose of environmental offsets is predicated upon a determination that the proposed offset activities might be undertaken in a manner complementary to the original purpose for which the lease was issued. It is not clear from the EIS whether Adani plans to use Moray Downs for pastoral purposes and, if so, whether the offset activities in question are complementary to use of the land for pastoral purposes. Moreover, the extent to which a leasehold interest is an appropriate form of tenure for the permanent conservation of environmental values is not addressed by Adani in its discussion of the Offsets Strategy, in the EIS. As to the **second scenario**, we note that conversion of term leases issued for pastoral purposes to freehold title is expressly prohibited by the Land Act. In accordance with s 166, the holder of a term lease for pastoral purposes 'may only apply' to have the lease converted to a perpetual lease.	Should implementation of the Offsets Strategy require a grant of freehold title, a further option involves the compulsory acquisition of the property by the State Government in order that a grant of freehold might be made to Adani.	Vol 4 Appendix AH: Environmental Offsets Strategy	Comment noted.
14	Chalk and Fitzgerald, Lawyers and Consultants	Land	Tenure	As noted above, a significant portion of Moray Downs overlaps with the W&J Claimants' registered native title claim.	As a result, the provisions of the Native Title Act 1993 (Cth) (NT A) must be complied with in relation to any dealings under the Land Act with that land. The NT A provides for certain categories of 'future act' which require validation through a statutory 'right to negotiate' process.	Vol 4 Appendix AH: Environmental Offsets Strategy Section 1.2 Implications under the Native Title Act 1993 (Cth)	Whilst a change in tenure or terms of an existing lease may, in certain circumstances, require consideration of and compliance with the Native Title Act 1993's 'future act' provisions, the establishment of nature refuge, voluntary declaration or statutory covenant cannot effect a change in underlying tenure or change in lease conditions and therefore no Native Title Act 1993 'future act' provisions. Please refer to SEIS Volume 4 Appendix F for the updated Offsets Strategy.
14	Chalk and Fitzgerald, Lawyers and Consultants	Land	Tenure	The actions of the Queensland Government in both the first scenario (the approval of an additional purpose for the lease) and the second scenario (either the conversion of the term lease over the property to perpetual lease, or the compulsory acquisition of the land, including native title rights - for the benefit of Adani) are future acts requiring validation for the purposes of the NTA. The right to negotiate is afforded to the registered native title claimants and registered native title holders (native title party).? The registered native title claimants have not received any notice of any proposed future act, or any correspondence from the Queensland Government or Adani about possible negotiations. The EIS submitted by Adani makes no mention of this aspect of their Offset Strategy, and the resultant uncertainty it creates.	When the Queensland Government proposes to do a future act, it must give notice to the native title party that will be affected by the act. The parties (including the Government and, where relevant, the grantee party) are then required to negotiate in good faith with a view to reaching agreement as to whether the act may go ahead. If no agreement is reached after a period of at least six months of good faith negotiations, then parties can apply to the relevant arbitral body (in this case, the National Native Title Tribunal) for a decision as to whether the future act is allowable, and on what conditions.	Vol 4 Appendix AH: Environmental Offsets Strategy Section 1.2 Implications under the Native Title Act 1993 (Cth)	Whilst a change in tenure or terms of an existing lease may, in certain circumstances, require consideration of and compliance with the Native Title Act 1993's 'future act' provisions, the establishment of nature refuge, voluntary declaration or statutory covenant cannot effect a change in underlying tenure or change in lease conditions and therefore no Native Title Act 1993 'future act' provisions. Please refer to SEIS Volume 4 Appendix F for the updated Offsets Strategy.

14	Chalk and Fitzgerald, Lawyers and Consultants	General comment	General Comment	The EIS identifies a proposed quarry for Moray Downs, which will provide raw materials for the construction of the proposed rail corridor associated with the Carmichael mine. Specifically, the proposed quarry involves the extraction of 500 000m^3 of 'sub-base and select fill' resources from a 10m deep pit which covers 50ha of land.		Quarry Proposal at Moray Downs - Rail Project Description, Vol 3 Chapter 2 2.1 Background	Comment noted.
14	Chalk and Fitzgerald, Lawyers and Consultants	Land	Tenure	Quarrying activity of this nature requires the conferral of a right to mine by the Queensland Government and therefore constitutes a future act for the purposes of the NT A.14 The requirement for validation of this act gives rise to the notice obligations and negotiation rights, outlined at 1.2 above. We note that the W&J Claimants are yet to receive notification - either formal or informal - of the quarry proposal specifically, in order that the matter might be properly resolved through negotiated agreement or, in the alternative, through an Indigenous Land Use Agreement.		Quarry Proposal at Moray Downs - Rail Project Description, Vol 3 Chapter 2 2.1 Background 2.2 Implications under the Native Title Act 1993 (Cth)	The W&J applicant have received notice of Adani's intention to carry out quarrying activities through the following: * Grant of ML 70441, following conclusion of the Native Title Acts 1993's 'right to negotiate' process will permit quarrying within the ML 70441 area. * Quarrying is a specific permitted activity under the terms of the ILUA currently under negotiation with the W&J applicant. In the event that Adani is unable to establish an ILUA with the W&J applicant that permits quarrying in areas outside of ML 70441, Adani will comply with the Native Title Acts 1993's 'right to negotiate' process in relation to the establishment of any quarries in such areas.
14	Chalk and Fitzgerald, Lawyers and Consultants	General comment	General Comment	We appreciate the opportunity to raise these matters as part of the EIS process.	The Coordinator-General should consider whether, given the uncertainty created by the issues set out above, Adani's proposals can in fact be implemented so as to manage the environmental impacts of the Project.	3. Conclusion and Suggested Action	Comments noted.
15	Aurizon	Project - Rail	General Comment	QR has changed its name to Aurizon from 1 December 2012	the change should be reflected throughout the document	General	Noted.
15	Aurizon	Project - Rail	General Comment	This EIS does not specifically address or detail how the proponent will work with Aurizon in dealing with and resolving the rail infrastructure and operational interface with the Aurizon rail network despite the fact that the project depends solely on the Aurizon rail network to access the port.	Adani to advise solution	General	The Carmichael Coal Mine and Rail EIS Terms of Reference did not require Adani to address rail infrastructure and operational interface issues. This matter is being addressed outside of the EIS process. Adani will continue to liaise and consult with Aurizon Operations Limited (Aurizon) with respect to access and connections to the Newlands and Goonyella Systems. Adani has secured access to two Aurizon land parcels to determine feasibility of connecting Adani's network with the Blair Athol line. A Service Level Agreement with Aurizon was signed on 13 November 2012. A report dated 14 February 2013 has confirmed the technical feasibility of Adani's proposed connection to the Aurizon network.
15	Aurizon	Transport	Other rail infrastructure	This EIS does not address the consequential impacts on the Aurizon network (across the Newlands and Goonyella Systems) of the additional traffic volumes generated by this project. Rail upgrades would most likely be required on the existing Aurizon rail network to accommodate the additional rail traffic generated by the proposal. The EIS proponent should engage closely with Aurizon in determining and implementing the upgrades required to support this project.	Adani to advise solution	Vol 1 Section 08 - Cumulative Impacts	The comment regarding the consequential impacts of the Project on the Aurizon network (across the Newlands and Goonyella Systems) is noted. Consequential impacts on the Aurizon (formally QR National) network are not included within the scope of work as set out in the project ToR. Assessment of expansion of existing rail infrastructure capacity is outside scope of this EIS process. As outlined in the EIS it is understood that the additional trains associated with the Mine's production can be accommodated on the existing rail network or on other rail lines proposed for development within the Galilee Basin. Any impact will be managed through the scheduling of trains which will be undertaken in consultation with Aurizon (formally QR National) and third party operators. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
15	Aurizon	Cumulative Impacts	Other rail infrastructure	To facilitate a consistent interface with landholders -This EIS does not discuss the potential to align Adani's approach with other proponents (particularly those which already operate existing rail corridors).	Adani to advise solution	Vol 1 Section 08 - Cumulative Impacts	Increased traffic on the Aurizon Newlands and Goonyella Systems will be addressed in the Interface Agreement between Adani and Aurizon. Adani have consulted with Aurizon on the network capacity (30mtpa and 60mtpa) and below rail network upgrades on 27 July 2011 and 1 June 2012 respectively. Adani will continue to liaise and consult with Aurizon Operations Limited (Aurizon) with respect to access on the Newlands and Goonyella Systems. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
15	Aurizon	Project - Rail	Air Quality	Commitments for rail- air quality states "Measures to mitigate the emissions will be investigated and applied through the Project (Rail) Environmental Management Framework that will consider the recommendations made in the OR Limited Coal Dust Management Plan (OR Network, 2010)".	This is a compliance issue not a consideration. It is a contractual requirement for access to the Aurizon rail system.	Vol 1 Section 10 - Project Commitments; Vol 3 Section 7 Air Quality	Adani will prepare a Coal Dust Management Plan identifying control measures to mitigate the emission of dust from loaded and unloaded coal trains. When operating on any Aurizon Operation Ltd (Aurizon) railway line, Adani will comply with the recommendations stated in the Aurizon (2010) Coal Dust Management Plan. Please refer to SEIS Volume 4, Appendix W for the Rail EMP, section 6.5.3 for Rail Operations related to coal dust.
15	Aurizon	Project - Rail	General Comment	Figure 2-4 - The diagram includes a 'maintenance yard' 1 Okm south - east of the mine. No assessments on impact to the Aurizon rail network have been made. It is also not clear what allowances have been made for non-coal train traffic requirements during construction that may impact operations on the Aurizon rail network.	Adani to advise solution	Vol 3 Section 02 - Description of the Project	Adani is accredited rail infrastructure manager and operator and has planned the operation of the Carmichael Coal rail system accordingly. Adani have identified the need for a maintenance facility in close proximity to the Carmichael mine to allow for better integration of workforce accommodation and transport.
15	Aurizon	Project - Rail	General Comment	Table 2-5 - The 164 wagons trains will be significantly overlength for the existing Newlands and Goonyella Systems. This will impact the safeworking system and rail infrastructure including level crossings. It is also noted that the plan proposes 120t wagons on the narrow gauge system (30tal). The proposed wagon and train configuration are different to the existing, and will need to be submitted for checking and determination of the acceptability or otherwise and the infrastructure changes to accommodate the proposed rollingstock in the existing rail network.	Adani to advise solution	Vol 3 Section 02 - Description of the Project	The operational strategy proposed in the Carmichael Coal Mine and Rail EIS provides a staged approach to the length of trains with the transport of up to 30mtpa proposed using 120 wagon consist. This is consistent with the current train length on the Goonyella system. Adani also understand that Aurizon is examining the extension of the length of trains on the Newlands system. The introduction of train lengths up to 164 wagon trains to support up to 60mtpa was based on advice provided by Aurizon in June 2012. Adani will continue to liaise and consult with Aurizon on rollingstock types and lengths proposed to be used on the Aurizon network.

15	Aurizon	Project - Rail	Air Quality	The EIS assessment does not appear to address the cumulative air emission impacts combined with existing train movements on the established rail network, particularly the Newlands and Goonyella systems. It appears to solely consider the Project rail movements only. Please advise what assessments have been made.	Adani to advise solution	Vol 1 Section 08 - Cumulative Impacts; Vol 3 Section 07 - Air Quality	Adani is proposing to transport all materials for construction of the Carmichael Coal Mine and Rail Project via road. The Traffic Impact Assessment Report provided in SEIS Volume 4, Appendix P addresses road transport requirements. Adani will prepare a Coal Dust Management Plan identifying control measures to mitigate the emission of dust from loaded and unloaded coal trains. When operating on any Aurizon Operation Ltd (Aurizon) railway line, Adani will comply with the recommendations stated in the Aurizon (2010) Coal Dust Management Plan. Please refer to SEIS Volume 4, Appendix W for the Rail EMP, section 6.5.3 for Rail Operations related to coal dust.
15	Aurizon	Project - Rail	Noise and Vibration	The EIS assessment does not appear to address the cumulative noise emission impacts combined with existing train movements on the established rail network, particularly the Newlands and Goonyella systems. It appears to solely consider the additional impacts from the Project rail movements. Please advise what assessments have been made.	Adani to advise solution	Vol 1 Section 08 - Cumulative Impacts; Vol 3 Section 09 - Noise and Vibration	Noise impacts from combined train movements on the established rail network are not within the scope of the Project ToR. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
15	Aurizon	Project - Rail	Other rail infrastructure	Section 11.3.5.3 (Impact to Existing Rail Operations). There is no assessment of the impacts from the operation of the Project (Rail) on the operation of Aurizon's Goonyella or Newlands Systems. The EIS includes the following text - It is understood that the additional trains associated with the Mine's production can be accommodated on the existing rail network or on other rail lines proposed for development within the Galilee Basin. The current system is designed to meet current capacity. There is no evidence of any modelling to support the statement that the existing rail network can accommodate the new demand, and there is no mention of any consultation with Aurizon (or QR National) on which to base the comment.	Adani to advise solution	Vol 3 Section 11 - Transport	The Carmichael Coal Mine and Rail EIS Terms of Reference did not require Adani to address the impact of the proposed rail on existing rail operations. Adani will continue to liaise with Aurizon on future capacity requirements.
16	QDETE - Skills & Employment	Social	Workforce Management		It is recommended that at Financial Investment Decision or the awarding of a contract, the Workforce data template on the Skills Queensland website is completed to provide a breakdown of the work force numbers and the skills and occupations needed. Although the SIMP notes that overseas workers will be sourced as a last resort, the Queensland Government requests notification and advice if overseas workers are sought - by occupation and number, and under which migration program they would be sourced.	Vol 1 Section 4 SIMP	Adani will consult with Skills Queensland during the final development of its Workforce Plan and provide regular updates based on their workforce data. Refer to SIA SEIS Volume 4 Appendix D1 Sections 8.6 and SIMP SEIS Volume 4 Appendix D1 Section 3.5
16	QDETE - Skills & Employment	Social	Workforce Management		The Workforce Management Plan when finalised should contain clear measurable targets against the commitments made for inclusive participation and skilling strategies. These targets should be reflected in any subcontracting arrangement.	Vol 1 Section 4 SIMP	Adani will develop training programs and targets as per their workforce management strategies. Refer to SIA SEIS Volume 4 Appendix D1 Sections 8.6 and SIMP SEIS Volume 4 Appendix D1 Section 3.5
16	QDETE - Skills & Employment	Social	Workforce Management	The Department of Education, Training and Employment (Skills and Employment) will continue to provide advice and assistance on employment and training strategies as required. In particular, assistance can be provided to link the proponents with the FIFO coordinators based in Cairns, Wide Bay Burnett and the Gold Coast		Vol 1 Section 4 SIMP	Noted.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	The Proponent has made several important statements confirming the importance of the proposed mine and rail project sites to the Black-throated finch (BTF) population in Queensland. These include: · Important habitat for Black-throated Finch (southern) covers 61% of the EPCs and Study Area (53,755 ha), and excluding the EPC areas, 52.6% of the Study Area. Combined with potential habitat category, Black-throated Finch (southern) habitat covers almost 64.9% of the Study Area. The number of Black-throated Finch (southern) observations made during this survey suggests that the species occurs in large numbers in the area and that the habitat is in good condition and suitable for the species.	However the Black Throated Finch Recovery Team (RT) believes the survey effort provided by the Proponent for the EIS documents is totally inadequate for a project of this importance to the BTF population. We maintain that significant additional survey works are required before the Proponent can fully assess the impacts of proposed works and provide mitigating actions to offset long term damage to the BTF population.	Vol 2 Section 5 Nature Conservation; Vol 3 Section 5 Nature Conservation; App N1, N3	Consultation meetings were held with the Black-throated Finch Recovery Team (3 May 2013) and DSEWPaC (7 June 2013) and a four part monitoring program was developed comprising of (I) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local monitoring (detailed) on the Mine Area. Further information is presented in a draft Black-throated Finch Adaptive Monitoring Plan. A detailed plan was prepared for the Local monitoring (observation) on the Mine Area and the first survey was conducted in May 2013. It established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Detailed vegetation and habitat data was collected at the 2 ha sites. Survey methods follow those in EPBC Significant Impact Guidelines. Surveys were conducted over 8 days. A further 208 records of BTF were recorded mainly from 2-ha counts in 12 locations, including 3 records of nesting. The camera traps recorded a further 6 locations and mainly utilising troughs and ephemeral water. The results are presented in Carmichael Coal Mine and Rail SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species Management Plan following the principles of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	· The over-storey vegetation and RE types (nesting sites), the diversity and condition of the ground cover (including a high diversity of grass species known to be key food resources for the species), the intact (un-cleared) and lightly grazed nature of the landscapes and the presence of artificial (dams and troughs) and natural water bodies (springs, permanent and ephemeral drainage lines), all combine to create highly suitable habitat for the species. · As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. Further, works may interfere with the species recovery by decreasing the availability or quality of habitat to the extent that the species is likely to decline.		Vol 2 Section 5 Nature Conservation; Vol 3 Section 5 Nature Conservation; App N1, N3	In consultation meetings with the Black-throated Finch Recovery Team (3 May 2013) and DSEWPaC (7 June 2013), a detailed a draft Black-throated Finch Adaptive Monitoring Plan was prepared including (iii) Local monitoring (observation) on the Mine Area. The first survey was conducted in May 2013. It established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Comprehensive vegetation and habitat data was collected at the 2 ha sites. Survey methods follow those in EPBC Significant Impact Guidelines. The aim of this monitoring is to collect detailed information on habitat use, distribution across the Mine Area, nest sites, variation in sites where BTF were present and absent, types of water sources preferred for use, habitat condition, weed, fire and grazing effects and landscape use. The results are presented in Carmichael Coal Mine and Rail SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey and the surveys will continue over time to provide data on temporal and spatial variation of habitat use of the Mine Area. This data will contribute significant information for incorporation into the Black-throated Finch Species Management Plan for the Mine Area, and will assist in species recovery and mitigation of impacts on the Mine Area.

17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Survey effort: waterhole counts**. We note the Proponent has conducted a number of waterhole surveys as part of the threatened species investigations. The records shown in table 1 of appendices E and H indicate these surveys were conducted at various times of the day, however the earliest is recorded at 0740hrs. The RT has been conducting waterhole surveys for 10 years and our records indicate that greater numbers of finches including the BTF start to come into drink shortly after sunrise and return to the water source on a regular basis for the next 2 hours before heading off to their foraging grounds. While the finches may return during the heat of the day, the numbers are not as great as those recorded during the initial early morning session. On this basis, the RT believes the Proponent's surveys do not provide an accurate record of the BTFs on the site nor will they have identified the important water holes for this sub-species.		Vol 2 Section 5 Nature Conservation; Vol 3 Section 5 Nature Conservation; App N1, N3	The monitoring currently being undertaken and presented in the Carmichael Coal Mine and Rail SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey, has established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Survey methods follow those in EPBC Significant Impact Guidelines. These surveys have increased the level of effort via waterholes surveys, particularly via the use of camera traps. 20 cameras were set for between 22 and 42 days recording data continuously - over 500 days of continuous monitoring. 6 new water bodies used by BTF were located. BTF were mainly using troughs and ephemeral water bodies, which are more difficult to survey using human observers. Nonetheless this level of effort with cameras is substantially larger than those recommended by the Significant Impact Guidelines and the new data is providing important data on water sources regularly used, and daily water use budgets. Further monitoring will identify if these water sources are regularly used, or if water sources use shifts seasonally. Different water sources will be monitored over time, as some dry out. However in the surveys conducted currently and in 2012 (EIS Appendix N3), indicate that 2-ha woodland searches are more successful in locating BTF and preferred habitats. This suggests that the focus on water source observation methods which are successful for single season peri-urban areas such as Townsville, might not be the best method for targeted BTF in more intact woodlands, such as those on the Mine Area.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Survey effort: BTF nests.** The Proponent has conducted a number of threatened species surveys on the site over a 2 year period but reports that they have not found any BTF nests nor any trace of BTF breeding activities. They do however accept that BFTs breed on the site. The RT has conducted a number of BTF surveys over the last 10 years and has recorded nests on many occasions. We have noted the BTF construct nests on a regular basis, not just during the breeding season. The nests are also used for roosting. The fact that the Proponent has failed to locate BTF nests during his surveys is of great concern to the RT. We maintain this demonstrates a lack of survey effort on the part of the Proponent and completely undermines his assessment of the importance of the habitat to the BTF.		Vol 2 Section 5 Nature Conservation; Vol 3 Section 5 Nature Conservation; App N1 (appendices E and H), N3	The monitoring currently being undertaken and presented in the Carmichael Coal Mine and Rail SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey, has established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. During these surveys evidence of nesting was located in three sites; at one site an adult bird (in a group of three) was observed picking up and carrying Panicum sp stalks in its mouth (and then flying off) suggesting nesting activity nearby; however the nests were not found. At another site at least two active nests being used by black-throated finch were found in Acacia coriacea. At one more additional site an active nest being used by black-throated finch was found in Eucalyptus melanophloia. No breeding activity was observed. The on-going monitoring will continue to survey nesting activity in these sites, and search for additional nest locations.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Survey effort: Rapid Assessment surveys.** The Proponent has conducted a number of 'rapid assessment' surveys as part of his investigations into the presence of the BTF on the site. While we recognise the benefit of these surveys for a general overview of the range of bird species using a particular section of habitat we maintain that they are not appropriate for the threatened species surveys that occupy this site. The RT believes the Proponent has failed to conduct adequate surveys for the BTF and as a result will have understated the BTF presence on the site.		Vol 2 Section 5 Nature Conservation; Vol 3 Section 5 Nature Conservation; App N1 (appendices E and H), N3	In consultation meetings with the Black-throated Finch Recovery Team (3 May 2013) and DSEWPaC (7 June 2013), a detailed a draft Black-throated Finch Adaptive Monitoring Plan was prepared including (iii) Local monitoring (observation) on the Mine Area. The first survey was conducted in May 2013. It established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Comprehensive vegetation and habitat data was collected at the 2 ha sites. Survey methods follow those in EPBC Significant Impact Guidelines. The aim of this monitoring is to collect detailed information on habitat use, distribution across the Mine Area, nest sites, variation in sites where BTF were present and absent, types of water sources preferred for use, habitat condition, weed, fire and grazing effects and landscape use. The results are presented in Carmichael Coal Mine and Rail SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey, and the surveys will continue over time to provide data on temporal and spatial variation of habitat use of the Mine Area. This data will contribute significant information for incorporation into the Black-throated Finch Species Management Plan for the Mine Area, and will assist in species recovery and mitigation of impacts on the Mine Area. Apart from the data presented in the EIS (Appendix N1 Mine Technical Report: Terrestrial Ecology Report), two more comprehensive BTF targeted surveys have been conducted (Appendix N3 Moray Downs Black-throated Finch Surveys, SEIS Volume 4 Appendix J2 Black-throated Finch Monitoring Survey) and these surveys will be on-going.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Survey effort: References to DEWHA guidelines and background paper.** The Proponent has included many cross references to his compliance to the DEWHA guidelines and background paper on BTF survey methods. The RT believes that while some of the later BTF surveys may have been conducted generally in compliance with DEWHA's documents, it is clear that many sections of the site have not been surveyed correctly. Of particular concern are the surveys conducted for the main mine footprint and particularly the rail project.		Vol 2 Section 5 Nature Conservation; Vol 3 Section 5 Nature Conservation; App N1 (appendices E and H), N3	In consultation meetings with the Black-throated Finch Recovery Team (3 May 2013) and DSEWPaC (7 June 2013), a detailed a draft Black-throated Finch Adaptive Monitoring Plan was prepared including (iii) Local monitoring (observation) on the Mine Area. The first survey was conducted in May 2013. It established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Comprehensive vegetation and habitat data was collected at the 2 ha sites. Survey methods follow those in EPBC Significant Impact Guidelines. The aim of this monitoring is to collect detailed information on habitat use, distribution across the Mine Area, nest sites, variation in sites where BTF were present and absent, types of water sources preferred for use, habitat condition, weed, fire and grazing effects and landscape use. The results are presented in Carmichael Coal Mine and Rail SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey, and the surveys will continue over time to provide data on temporal and spatial variation of habitat use of the Mine Area. This data will contribute significant information for incorporation into the Black-throated Finch Species Management Plan for the Mine Area, and will assist in species recovery and mitigation of impacts on the Mine Area. Apart from the data presented in the EIS (Appendix N1 Mine Technical Report: Terrestrial Ecology Report), two more comprehensive BTF targeted surveys have been conducted (Appendix N3 Moray Downs Black-throated Finch Surveys, SEIS Volume 4 Appendix J2 Black-throated Finch Monitoring Survey) and these surveys will be on-going.

17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Survey effort: The Rail Project.** The Proponent has stated that BTFs are likely to use the rail project site but they have not recorded any BTFs during their surveys of the area. He does however confirm that 64ha of important BTF habitat will be lost as a result of the works. However, the Rail Ecology Report states that the Proponent committed only 9 person hours to the 3 water hole surveys conducted. He also reports that 'given limited access within the Study Area (refer Section 1.5) it was not possible to assess the level of impact the Project may incur to this species based on field survey alone'.		Vol 3 Section 5 Nature Conservation; App N1 (appendices E and H), N3	Though 64 ha of important habitat will be lost, this is not contiguous habitat, and much of it occurs is small, narrow portions along an extensive linear corridor and across suboptimal regional habitat (i.e. largely cleared land in the Northern Brigalow Belt). Evidence from surveys on the Mine Area itself suggest that the best BTF habitat occurs in the mosaics of Eucalyptus melanophloia, E. brownii/populnea, E. similis vegetation that is intact and lightly grazed and within the Desert Uplands bioregion. Furthermore, despite some information in the Significant Impact Guidelines, surveys on the Mine Area indicate that BTF are not effected by narrow linear clearings or larger paddock clearings; BTF were recorded > 1km from remnant vegetation drinking at troughs and dams, and therefore traverse wide areas of non-remnant vegetation. Therefore though the survey effort seems low for this linear corridor, the extent of habitat is low, and the potential impacts low in comparison, and thus the survey effort has been concentrated in the more intact habitat on and adjacent to the Mine Area, where management and mitigation of threats to the species are a higher priority.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	The RT maintain this level of survey effort is completely inadequate for a project the size of the rail project and the Proponent has completely failed to satisfy the EIS terms of reference in this regard. Furthermore, he has proposed a number of mitigating actions on the assumption that the project will have no impact on the BTF. We believe the Proponent must be instructed to complete adequate field surveys for this project before drawing up conclusions on the likely impact of the rail project on the BTF.		Vol 3 Section 5 Nature Conservation; App N1 (appendices E and H), N3	The level of survey effort for the Mine Area has been substantially increased from the initial EIS (Appendix N1. Mine Technical Report: Terrestrial Ecology Report), with two recent dedicated BTF surveys (Appendix N3. Moray Downs Black-throated Finch Surveys, Volume 4. and SEIS Appendix J2. Black-throated Finch Monitoring Survey). These recent surveys have provided a large number of new records, and important ecology and habitat information that has previously been lacking from the Significant Impact Guidelines. In particular a draft Black-throated Finch Adaptive Monitoring Plan was prepared including (iii) Local monitoring (observation) on the Mine Area. The first survey of this long term monitoring program was conducted in May 2013. It established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Comprehensive vegetation and habitat data was collected at the 2 ha sites. Survey methods follow those in EPBC Significant Impact Guidelines. The aim of this monitoring is to collect detailed information on habitat use, distribution across the Mine Area, nest sites, variation in sites where BTF were present and absent, types of water sources preferred for use, habitat condition, weed, fire and grazing effects and landscape use. The surveys will continue over time to provide data on temporal and spatial variation of habitat use of the Mine Area. This data will contribute significant information for incorporation into the Black-throated Finch Species Management Plan for the Mine Area, and will assist in species recovery and mitigation of impacts on the Mine Area.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Survey Effort: Definition of BTF important habitat.** The Proponent has determined BTF important habitat using desk studies of regional ecosystems and confirmed BTF sightings. However because of the low standards used for threatened species surveys, the RT believes the number of BTFs on the site has been grossly understated and as such the identification of BTF habitat is incorrect.		Vol 2 Section 5 Nature Conservation; Vol 3 Section 5 Nature Conservation; App N1 (appendices E and H), N3	The diversity of regional ecosystems on the Mine Area are relatively low, and dominated by box, ironbark and yellowjack communities. However the highest numbers of black-throated finch are consistently recorded in these mosaics, the intact remnant vegetation dominated by ironbark Eucalyptus melanophloia woodlands (10.5.5) and the associated yellowjack E. similis (10.5.1) and box E. populnea/brownii woodlands (10.3.6 / 10.3.28). This vegetation on the site, especially in the north-west, west and south-west, is in particularly good condition due to the low level of artificial watering points, low degree of exotic pasture invasion, the presence of poison bush (Gastrolobium grandiflora) which is toxic to cattle, and seemingly a history of low or light grazing. Many grass species that are considered "decreases", that is vulnerable to disappear due to cattle grazing, are diverse and of a high cover abundance in there areas. This includes a large number of grass species (e.g. Alloteropsis, Triodia, Digitaria, Enteropogon, Eriachne, Panicum) considered preferred food sources for the black-throated finch.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Survey Effort: Remote Cameras.** The Proponent has made several references to the use of remote fauna cameras deployed at potential drinking sites and water bodies to identify any individual BTF drinking at the water source. The Proponent should clarify if this equipment has been of any benefit to the surveys as there appears to be no survey records included in the EIS.		App N1, N3	Twenty cameras (ScoutGard SG560Z-8M) were installed at a range of different water bodies, including large dams, troughs, puddles near leaking tanks, road scrapes and ephemeral drainage lines. All were set by the week ending 31 May 2013 and were collected in the week ending 27 June 2013. Cameras were installed at water sources where easy access to watering points was available for black-throated finches (southern), (e.g. banks flat and with sparse vegetation and shallow water). A further six black-throated finch sites were recorded from the camera traps, ranging from 1 to 89 separate photos of the bird and of a maximum recorded flock size from 1 to 41 individuals. Four of the cameras that recorded black-throated finch were troughs, one was an ephemeral scrape and one was a large dam. The cameras were operating from between 22 to 42 days and collected between 5 and 9565 pictures per camera. This included between 1 and 913 pictures of fauna. The technique demonstrates that the cameras are able to record continuously for over 30 days and present information on daily water use, and time of water use. Monitoring including the use of cameras will continue, and the data will contribute significant local data for incorporation into the Black-throated Finch Species Management Plan for the Mine Area, and will assist in species recovery and mitigation of impacts on the Mine Area. Camera traps provide significant secondary information on other species such as feral animals (pigs Sus scrofa and cats Felis catus), which may be used in feral pest management on the Mine Area, and the presence of other EPBC listed species such as the Squatter Pigeon (southern).

17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Survey Effort: Incidental Sightings.** The Proponent makes several references to incidental sightings of BTF during the 2 year period covered by the EIS surveys. The RT believes the Proponent has not fully considered these sightings in his overall assessment and as such the BTF population on the site has been understated.		App N1, N3	In both Appendix N3 Moray Downs Black-throated Finch Surveys (2012) and SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey (2013), a large number of incidental sightings are reported and provide significant information on the distribution, habitat use and population of the Black-throated Finch on site. In the EIS surveys 19 incidental records are reported, and in Volume 4, Appendix J2, eight incidental records are reported. For each of these recent incidental records the recommended data on BTF habitat and activity was recorded and reported. The incidental data was used in the habitat mapping. The systematic surveys using 2 ha counts, water body counts and camera traps has provided more BTF records and important data on population distribution and abundance.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Mitigating Proposals: Proposals for Management Plans and Offset Strategy.** The Proponent has made a number of recommendations in the Black-throated Finch report with proposals for management plans and offset strategies. These recommendations include the need to identify BTF breeding sites.	While the RT cannot fault these recommendations, they confirm our belief that surveys conducted on this project are insufficient to determine the full impact of the works on the BTF and that further surveys are required.	Vol 2 Section 5 Nature Conservation; Vol 3 Section 5 Nature Conservation; App N1 (appendices E and H), N3	The monitoring currently being undertaken and presented in SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey, has established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. During these surveys evidence of nesting was located in three sites; at one site an adult birds was observed Panicum sp stalks in its mouth suggesting nesting activity nearby; however the nests were not found. At another site at least two active nests being used by black-throated finch were found in Acacia coriacea. At a further site an active nest being used by black-throated finch was found in Eucalyptus melanophloia. No breeding activity was observed. The on-going monitoring will continue to survey nesting activity in these sites, and search for additional nest locations. This data will contribute significant information for incorporation into the Black-throated Finch Species Management Plan for the Mine Area, and will assist in species recovery and mitigation of impacts on the Mine Area.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Mitigating Proposals: BTF Research.** The Proponent has identified the need for additional research into the BTF as part of the mitigating actions proposed to offset the impact of the works. He states that given current knowledge, it is difficult to determine the likely efficacy of the proposed measures in reducing impacts and protecting the subspecies is difficult to quantify. While the RT recognised there are several aspects of the BTF ecology that do require further detailed research we are not convinced such research is required before the full impacts of this project on the BTF can be evaluated. We firmly believe that more survey work is required before the full impacts and possible mitigating actions can be fully defined.	question the need for further research at this stage of the project.	Vol 2 Section 5 Nature Conservation; Vol 3 Section 5 Nature Conservation; App N1 (appendices E and H), N3	Further detailed monitoring and survey work on the Mine Area and adjacent properties has been, and will continue to be undertaken. Consultation meetings were held with the Black-throated Finch Recovery Team (7 April 2013) and DSEWPaC (7 June 2013) and a four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local monitoring (detailed) on the Mine Area. Further information is presented in a draft Black-throated Finch Adaptive Monitoring Plan. A detailed plan was prepared for the Local monitoring (observation) on the Mine Area and the first survey was conducted in May 2013. It established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Detailed vegetation and habitat data was collected at the 2 ha sites. Survey methods follow those in EPBC Significant Impact Guidelines. Surveys were conducted over 8 days. A further 208 records of BTF were recorded mainly from 2-ha counts in 12 locations, including 3 records of nesting. The camera traps recorded a further 6 locations and mainly utilising troughs and ephemeral water. The results are presented in SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species Management Plan following the principles of adaptive monitoring and management.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Mitigating Proposals: Phased Construction of the Mine site.** The Proponent has suggested that his phased construction schedule will allow important BTF habitat and associated BTF populations to be encouraged to relocate to non-mining areas. While not completely dismissing this as a worthwhile option, the RT believes the Proponent has failed to fully consider what would be required to make this effective. He has failed to identify the important waterholes and nesting trees for the BTF populations and as such will not be able to establish the full impact of his phased construction works on the BTF populations on the site. A key issue is that this rationale implies that either (i) birds will move to suitable sites that the species, for some reason, does not currently occupy; (ii) that they can be encouraged to move to sites that are not currently suitable but that can be made suitable through management; or (iii) that impacted populations will move to share space with populations that are not impacted, that is, that can be encouraged to live at higher densities. Each of these possibilities is based on dubious ecological understanding.		Vol 2 Section 5 Nature Conservation; App N1 (appendices E and H), N3	The phased construction schedule will allow this important population, movement and habitat information to be collected, particularly with respect to seasonal use, key areas, nest sites, important feeding areas, etc. Consultation meetings were held with the Black-throated Finch Recovery Team (7 April 2013) and DSEWPaC (7 June 2013) and a four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local monitoring (detailed) on the Mine Area. Further information is presented in a draft Black-throated Finch Adaptive Monitoring Plan. Component (iii) Local monitoring (observational) on the Mine Area has commenced and has established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Comprehensive vegetation and habitat data was collected at the 2 ha sites. Survey methods follow those in EPBC Significant Impact Guidelines. The results are presented in SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey, and the surveys will continue over time to provide data on temporal and spatial variation of habitat use of the Mine Area. This data will contribute significant local data for incorporation into the Black-throated Finch Species Management Plan for the Mine Area, and will assist in species recovery and mitigation of impacts on the Mine Area and in particular the best strategies over time to manipulate the distribution of BTF on the Mine Area (e.g. via use of water sources, fire, grazing removal), or the requirement for trapping or translocations.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Mitigating Proposals: Subsidence from Underground Mining.** The Proponent has confirmed the likelihood of impacts on BTF important habitat from subsidence due to the underground mining activities on the site. The impacts include the formation or loss of waterholes and the loss of trees. The Proponent suggests any increased water supplies will be of benefit the BTF population in the area. The RT believes this completely understates the full impact on the BTF population in the underground mining works sections of the site. The Proponent has failed to identify the main waterholes and nesting trees in this area and so is unable to quantify the impact on the BTF populations in this area. It is not clear if the Proponent has included the loss of this important BTF habitat in his overview assessment of the impacts of the project works. Subsidence is likely to impact all three general resources required by BTF, namely, water, trees and grass seeds.		Vol 2 Section 5 Nature Conservation; Section 13 EMP; App N1 (appendices E and H), N3	The phased construction schedule will allow important population, movement and habitat information to be collected, particularly with respect to seasonal use, key areas, nest sites, important feeding areas, etc. Consultation meetings were held with the Black-throated Finch Recovery Team (3 May 2013) and DSEWPaC (7 June 2013) and a four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local monitoring (detailed) on the Mine Area. Further information is presented in a draft Black-throated Finch Adaptive Monitoring Plan. Component (iii) Local monitoring (observational) on the Mine Area has commenced and has established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Comprehensive vegetation and habitat data was collected at the 2 ha sites. Survey methods follow those in EPBC Significant Impact Guidelines. The results are presented in SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey, and the surveys will continue over time to provide data on temporal and spatial variation of habitat use of the Mine Area. This data will contribute significant local data for incorporation into the Black-throated Finch Species Management Plan for the Mine Area, and will assist in species recovery and mitigation of impacts on the Mine Area. In the case of subsidence, which will occur gradually and in a complex and partly unpredictable manner, the data being collected by this monitoring will provide information regarding the best strategies over time to mitigate negative effects and manage key resources for BTF on the Mine Area.

17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Mitigating Proposals: Maintain existing BTF important habitat.** The Proponent has made several references to the presence of good numbers of BTFs on the site and the presence of habitat favoured by the BTFs. The RT maintains the Proponent must provide proposals that maintain this habitat in its current condition. We are particularly concerned that the construction activities will stop the current grazing management of the site, a change that is not necessarily in the interests of the BTF because of risks of ingress of weeds, wood thickening and the loss of man-made water sources. This may result in the degradation of the habitat favoured by the BTF.		Vol 2 Section 5 Nature Conservation; Vol 3 Section 5 Nature Conservation; App N1 (appendices E and H), N3	A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local monitoring (detailed) on the Mine Area. Further information is presented in a draft Black-throated Finch Adaptive Monitoring Plan. A detailed plan was prepared for (iii) the Local monitoring (observation) on the Mine Area and the first survey was conducted in May 2013. The results are presented in SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey. This monitoring will contribute to the Black-throated Finch Species Management Plan following the principles of adaptive monitoring and management. However key early results suggest some important new data regarding BTF habitat at the Mine Area, and in effect central Queensland, compared to the restricted knowledge regarding the population around the Townsville region. The highest numbers of black-throated finch are consistently recorded in the intact remnant vegetation dominated by ironbark Eucalyptus melanophloia woodlands (10.5.5) and the associated yellowjack E. similis (10.5.1) and box E. populnea/brownii woodlands (10.3.6 / 10.3.28). This vegetation on the site, especially in the north-west, west and south-west, is in particularly good condition due to the low level of artificial watering points, low degree of exotic pasture invasion, the presence of poison bush (Gastrolobium grandiflora) which is toxic to cattle, and seemingly a history of low or light grazing. Many grass species that are considered “decreases”, those that are vulnerable and disappear due to cattle grazing, are diverse and of a high cover abundance in there areas. This includes a large number of grass species (e.g. Alloteropsis, Triodia, Digitaria, Enteropogon, Eriachne, Panicum) considered preferred food sources for the black-throated finch. In many of the poor habitats, where BTF were absent despite the vegetation type being suitable, the influx of exotic pastures (Buffel grass, Indian Couch, Stylosanthes) was high and the evidence of heavy grazing and low grass diversity was evident. Thickening also is not a significant issue as BTF nest in dense mid canopy species and often E. melanophloia regrowth. BTF also use a variety of ephemeral natural water sources, as well as man made sources, and smaller troughs in lightly or ungrazed habitat seems to be important. The reduction and removal of cattle grazing will be a significant management action, in addition to ecologically sensible fire regimes.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	**Mitigating Proposals: Pre-construction surveys.** The Proponent has proposed the use of pre-construction surveys as a fundamental part of his mitigating action proposals.	However considering the poor standard of his survey efforts as conducted for the EIS documents, the RT believe fully trained and resourced survey teams must be employed to conduct any additional survey works associated with the construction activities. Should the current survey standards be maintained, there can be no confidence the Proponents mitigating actions will be correctly implemented resulting in far greater impacts on the BTFs on the site.	Vol 2 Section 5 Nature Conservation; Vol 3 Section 5 Nature Conservation; App N1 (appendices E and H), N3	Consultation meetings were held with the Black-throated Finch Recovery Team (3 May 2013) and DSEWPaC (7 June 2013) and a four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local monitoring (detailed) on the Mine Area. Further information is presented in a draft Black-throated Finch Adaptive Monitoring Plan. A detailed plan was prepared for the Local monitoring (observation) on the Mine Area and the first survey was conducted in May 2013. It established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Detailed vegetation and habitat data was collected at the 2 ha sites. Survey methods follow those in EPBC Significant Impact Guidelines. Surveys were conducted over 8 days. A further 208 records of BTF were recorded mainly from 2-ha counts in 12 locations, including 3 records of nesting. The camera traps recorded a further 6 locations and mainly utilising troughs and ephemeral water. The results are presented in Carmichael Coal Mine and Rail SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species Management Plan following the principles of adaptive monitoring and management.
17	Black Throated Finch Recovery Team	Nature Conservation	Black-Throated Finch	The Proponent seeks to prove there are large areas of BTF important habitat on the site and the loss of in excess of 9000ha on the mine and rail project sites will not have an impact on the BTF population. The RT completely disagree with this suggestion and believes the Proponent must provide positive mitigating actions that will address the impacts of his construction works rather than make the rather dubious assumption that BTF populations will relocate to other areas when work starts. We believe the current mitigating action proposals do not address this issue and as a result the proposed mine and rail track project works will have a major impact on this very important population of BTFs on this site.		Vol 2 Section 5 Nature Conservation; Vol 3 Section 5 Nature Conservation; App N1 (appendices E and H), N3	The phased construction schedule will allow this important population, movement and habitat information to be collected, particularly with respect to seasonal use, key areas, nest sites, important feeding areas, etc. Consultation meetings were held with the Black-throated Finch Recovery Team (7 April 2013) and DSEWPaC (7 June 2013) and a four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local monitoring (detailed) on the Mine Area. Further information is presented in a draft Black-throated Finch Adaptive Monitoring Plan. Component (iii) Local monitoring (observational) on the Mine Area has commenced and has established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Comprehensive vegetation and habitat data was collected at the 2 ha sites. Survey methods follow those in EPBC Significant Impact Guidelines. The results are presented in SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey, and the surveys will continue over time to provide data on temporal and spatial variation of habitat use of the Mine Area. This data will contribute significant local data for incorporation into the Black-throated Finch Species Management Plan for the Mine Area, and will assist in species recovery and mitigation of impacts on the Mine Area and in particular the best strategies over time to manipulate the distribution of BTF on the Mine Area (e.g. via use of water sources, fire, grazing removal), or the requirement for trapping or translocations.

18	QDAFF Industry & Planning Services - Central Region	Land	Topography, geology and soils	Soil analysis was done for EPC1690 but not EPC1080. It is anticipated that better quality agricultural land might be found on the eastern half of Moray Downs where EPC1080 is located. The EIS does not discuss this area in detail.	The EIS should provide suitable data (e.g. on soils and agricultural suitability) on all areas likely to be affected by the Project.	Volume 2 Chapter 4 (s4.2.3.4, p4-52 & s4.2.3.5, p4-53)	A survey will be undertaken for the Project. This assessment will include the areas contained within EPC 1080 and the offsite infrastructure area. This assessment has been included within the SEIS project Commitments (refer to SEIS Volume 1 Chapter 11 Project Commitments). Depending on outcomes of the soil assessment, management practices will be described according to the identified soil types. Such practices could be similar to those prescribed for the EPC 1690 soils. Refer to Section 3 of EIS Volume 4, Appendix L, Mine Soils Assessment Report.
18	QDAFF Industry & Planning Services - Central Region	Land	Land Use and tenure	Approximately 16,000ha will be disturbed over the 90+ year lifespan of Project. The majority of this area is elevated country that will require rehabilitation. The balance being final voids. The final treatment of these voids receives only notional consideration in the EIS. Based on currently available information, it is likely that rehabilitation will be challenging because of the generally poor quality of the soils (structure, fertility etc) and low rainfall (as indicative of EPC1690).	1 This Project is likely to be among the first to access the Galilee Basin resources and in the interests of the co-existence with existing agriculture, it is appropriate for the Project to adopt best practice rather than the approaches currently used in the Bowen Basin. 2 The EIS should discuss what is expected to occur within the final voids and detail particular mitigation measures that will be needed in these areas. Given the low rainfall of the area and the high evaporation rates, the Project should be exploring alternatives to the current plans which assume that the voids will be water bodies, as this may be only an irregular occurrence.	Volume 2 Chapter 4 (s4.2.4, p4-57 & s13.34, p13-215)	Details regarding final voids have been included within the Updated Mine Hydrogeology Report (refer to SEIS Volume 4 Appendix K1), the Project (Mine) draft EMP and the Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix R1 Draft Rehabilitation MP - Mine, and Q1 EMP - Mine).
18	QDAFF Industry & Planning Services - Central Region	Land	Land Use and tenure	The EIS has acknowledged that development of the mine will effectively convert 44,730ha of existing cattle grazing land to a mining landscape. It is likely that the mine will also impact on the neighbouring properties (such impacts could include environmental, social and economic impacts). The construction of the Project's rail components will also disrupt existing agricultural land use activities, potentially resulting in 'direct permanent changes to land use'.	For the long term benefits of the co-existence with agricultural land use, the Project must work with affected landholders to ensure that Conduct and Compensation Agreements mitigate the temporary and/or permanent loss of agricultural land use and any disruption to farming activities and livelihoods of affected landholders.	Volume 2 Chapter 4 (s4.4, p4-65)	Noted.
18	QDAFF Forestry	Land	Land Use and tenure	Under the provisions of the Forestry Act 1959, forest products and quarry materials on State lands and certain freehold lands are owned by the State, and unless an exemption/authorisation applies under another Act, the use of, or interfering with such forest products and quarry materials requires DAFF authorisation. The EIS provide no details on whether commercial quantities of State-owned forest products administered under the Forestry Act 1959 will be interfered with and/or if an exemption/authorisation applies under another Act. There are numerous references throughout the EIS to fill and cut requirements however the EIS provides no information on whether State-owned quarry material administered under the Forestry Act 1959 will be used in the Project or if an exemption and/or authorisation applies under another Act.	1 The Proponent should liaise with DAFF on all of matters concerning State-owned forest products and quarry materials. 2 The EIS must identify if commercial quantities of State-owned forest products administered under the Forestry Act 1959 are likely to be interfered with (i.e. cleared, destroyed, etc). In such instances, the Proponent must assist DAFF in arranging a timber salvage operation before the commencement of Project related work. Where timber salvage is not possible and/or forest products are likely to be sterilised or restricted from utilisation (including offsets and loss of access for existing operations authorised under the Forestry Act 1959) the Proponent may need to pay compensation to DAFF. If there are exemptions from the need to obtain such approvals from DAFF, the reasons why should be clearly stated.	Volumes 2 & 3 Chapters 4 (c4)	Noted. Adani will liaise with QDAFF on all matters concerning State-owned forest products and quarry materials.
18	QDAFF Forestry	Land	Land Use and tenure		3 The Project must identify if State-owned quarry material administered under the Forestry Act 1959 will be used, and must contact DAFF to arrange authorisation before any use of quarry material commences. The Proponent must identify where and if such quarry material could possibly be sterilised or restricted from utilisation (including offsets and loss of access for existing operations authorised under the Forestry Act 1959) and negotiate suitable arrangements with DAFF and other affected parties before any commencement of any Project related work. The Project must describe how infrastructure will be designed to avoid or minimise adverse impacts to currently exploited or other commercial deposits of quarry materials authorised under the Forestry Act 1959.	Volumes 2 & 3 Chapters 4 (c4)	Noted. Adani will liaise with QDAFF on all matters concerning State-owned forest products and quarry materials.
18	QDAFF Forestry	Land	Land Use and tenure	The Projects are located over a number of tenures including leasehold, and freehold lands and dedicated roads. Private Forestry (forestry on freehold land) is one of the Principal Ministerial Responsibilities of the Minister for Agriculture, Fisheries and Forestry, and as such a responsibility of DAFF. The private forestry resource (predominately native forest) supplies >50% and >10% of the state's hardwood and cypress log timber respectively for Queensland's timber processing sector. The EIS provides no information on whether commercial quantities of privately-owned (freehold land) forest products will be interfered with and if so how the Proponent will facilitate a timber salvage operation for the local timber industry before any Project work commences.	The EIS must identify if commercial quantities of privately-owned (freehold land) forest products will be interfered with and if so, how the Proponent will facilitate a timber salvage operation for the local timber industry before any work commences.	Volumes 2 & 3 Chapters 4 (c4)	Noted. Adani will liaise with QDAFF on all matters concerning State-owned forest products and quarry materials.
18	QDAFF Biosecurity Qld	Nature Conservation	Pest species	There is no mention in the EIS of locusts (migratory and spur-throated) or consideration of process to control these Class 2 pest species in the event of a plague. Locusts at both the hopper and adult stage can cause extensive crop and pasture damage and both species are given high priority status in the local area Pest Management Plan.	Migratory and spur-throated locusts can potentially inhabit the mine site in large numbers prior to swarming to regionally important cropping areas. The risk of these plague pest species needs to be recognised in and a process developed in collaboration with state and local authorities to enable aerial control work to be conducted. This should be cross-linked to the relevant section of the EMP including Chapters 13 & 14.	Volume 2 Chapter 5 (s5.4.5.1, p5-153) Chapter 13 EMP	Updates have been made to the Project's EMPs (SEIS Volume 4, Sections Q1 (Mine), Q2 (Offsite) and W (Rail)) to reflect the potential presence and need for control of locust species.

18	QDAFF Biosecurity Qld	Nature Conservation	Pest species	This section does not acknowledge the potential for introduction of species not present in the study site. This section should also refer to species given high priority status in the local Pest Management Plan.	Greater consideration should be given to the prevention of giant rat's tail grass, prickly acacia and hymenachne (in the mitigation of aquatic species). This should be cross-linked to the relevant section of the EMP.	Volume 2 Chapter 5 (s5.4.5.1, p5-153) Chapter 13 EMP	Updates have been made to the Project's EMPs (SEIS Volume 4, Sections Q1 (Mine), Q2 (Offsite) and W (Rail)) to reflect management measures to prevent the introduction of species not currently present in the project area. Updates have been made to the Project's EMPs (SEIS Volume 4, Section Q1 (Mine), Q2 (Offsite) and W (Rail) to reference the Isaac Regional Council Pest Management Plan.
18	QDAFF Biosecurity Qld	Nature Conservation	Pest species	While this section mentions that pest animal occurrence will be monitored during Project construction, it does not provide any details about the actions to prevent increased numbers of pest animals around Project infrastructure (e.g. buildings and infrastructure of the mine, rail, accommodation areas and work camps, windrows, etc) that can attract and provide suitable harbour for cats, foxes and rabbits.	The EMP needs to outline the actions to be taken to prevent these species increasing in number as a result of the Project. Full consideration needs to be given to how materials, equipment, structures and waste (including putrescibles) associated with the construction and operations of the mine, rail, accommodation areas, airport and other infrastructure will be managed to limit pest species aggregating in these areas. This should be cross-linked to the relevant section of the EMP including but not limited to sections 13.22.7 and 13.23.5.2 (Table 13-72) as an elaboration of the general action to 'conduct pest control program for feral cats, pigs and cane toads'.	Volume 2, Chapter 5 (s5.4.5.1, p 5-153) Volume 3, Chapter 5. Chapter 13 EMP	Updates have been made to the Project's EMPs (SEIS Volume 4, Sections Q1 (Mine), Q2 (Offsite) and W (Rail)) to provide greater detail around these matters and clear linkages to the waste minimisation and control processes to be implemented. Updates have been made to the Project's EMPs (SEIS Volume 4, Sections Q2 (Offsite) and W (Rail) to include control measures such as waste management, monitoring of pest animal occurrence, restrictions of domestic animals and monitoring of feral animals.
18	QDAFF Fisheries Qld	Water resources	Waterway barrier works	Any waterway barriers inside of the Project area have the capacity to impact upon fish movement and waterway habitats with ramifications to the fisheries resources of the region. DAFF seeks the Proponent's commitment that within Mining Lease areas, fish passage is provided for within any waterway works, stream crossings or waterway diversions, and that Project will minimise and mitigate any impacts upon waterway habitats	**Recommended conditions:** 1. The Proponent shall obtain development approval for operational works that is the building or raising of waterway barrier works under the Fisheries Act 1994 including all waterway diversions, levee designs, culvert or bed level crossings, rock armouring and/or all and any other works within a waterway as defined under the Fisheries Act 1994 for both permanent and temporary works outside of Mining Lease areas. 2. The Project shall not directly or indirectly increase water velocities within waterways or waterway diversions to a level that would prevent fish movement through a structure outside of Mining Lease areas.	Volume 2 Chapter 6 (c6)	Comments are noted.
18	QDAFF Fisheries Qld	Water resources	Waterway barrier works	Comments: 1. In instances where Waterway Barrier Works applications and approvals are not exempt under the Mineral Resources Act 1989, the Proponent is advised of the relevance of the Sustainable Planning Act 2009 and Fisheries Act 1994, and that DAFF is the relevant authority. Approvals required under the Fisheries Act 1994 for the Project could potentially include operational works approval for the construction and/or raising of waterway barrier works. 2. The Proponent should commit to consulting with DAFF during the detailed design stage for all waterway diversions, levee designs, culvert or bed level crossings, rock armouring, and for all and any other works within a waterway as defined under the Fisheries Act 1994 for both permanent and temporary works.		Volume 2 Chapter 6 (c6)	Comments are noted.
18	QDAFF Fisheries Qld	Water resources	Waterway barrier works	3. The Proponent should commit that within the Mining Lease areas: (1) Any waterway diversions, levee designs, culvert or bed level crossings, or rock armouring within the Mining Lease are where possible, consistent with the requirements of the Fisheries Act 1994, to adequately provide for fish passage, and provide equal or enhanced habitat values and habitat complexity. (2) Any waterway diversions mimic the meandering of the low flow channel, the width and depth of the waterway and natural bed substrates to the greatest extent possible to promote fish passage and the replacement of lost habitat. (3) The Project shall not directly or indirectly increase water velocities within waterways or waterway diversions to a level that would prevent fish movement through the respective Project sites.		Volume 2 Chapter 6 (c6)	Comments are noted.
18	QDAFF Biosecurity Qld	Hazard and Risk	Public Health and Safety	This section states that the airport operations will be limited to servicing the east coast of Australia. Given the life-span of the Project (99 years), and the Proponent's approach to be a fully integrated operation, it is unclear whether future use would include direct international flights for foreign FIFY workers. Food, plant material and animal products from overseas can introduce serious pests and diseases into Australia and appropriate quarantine arrangements (i.e. with Australian Government Department of Agriculture, Fisheries and Forestry) should be made.	1The EIS needs to clarify whether the airport will at any future time service direct international flights, and if so, how the quarantine arrangements be coordinated with the appropriate Australian Government agencies.	Volume 2 Chapters 11, 13 & 14 (s11.3.5.1, p11-28)	It is currently not anticipated that the Carmichael airstrip will be utilised for international flights. Should there be a need to source workforce or products from overseas, these will enter the country through an international airport, where immigration and quarantine requirements are enforced by the Commonwealth Government.

18	QDAFF Biosecurity Qld	Hazard and Risk	Public Health and Safety	The EIS notes that there is the potential for any rehabilitated site to have undesirable contaminants in the land or in the run-off from the land that ends up in animal drinking water. Under the Stock Act 1915, DAFF can quarantine land and 'things' that may cause a residue in stock.	The EIS must address water contamination and aquatic ecology issues. It is appropriate that the rehabilitation approach also consider the risk posed to the product integrity of animals grazing on contaminated land (where mining land is to be returned to livestock production), with an appropriate risk management strategy developed.	Volume 2 Chapters 11, 13 & 14 (c13)	Please refer to Updated EMP- Mine in SEIS Volume 4, Appendix Q1 and Closure and Rehabilitation Management Strategy - Mine in SEIS Volume 4, Appendix R1. Adani is working with DEHP to finalise draft conditions under the Environmental Authority including conditions relating to water quality monitoring and receiving water quality. The Mine Closure and rehabilitation Strategy has nominated a post mine land use / activity (grazing) consistent with the pre mining land use. Rehabilitation criteria have been proposed in accordance with this post mine land use treatment, including criteria associated with potentially contaminated land and the required treatment of contamination prior to and or during rehabilitation activities (SEIS Volume 4 Appendix R1 – Section 4.2).
18	QDAFF Biosecurity Qld	Hazard and Risk	Risk management	There is no dedicated Biosecurity Plan in the EIS, although advice is provided across a number of sections of the EIS and EMPs.	The EIS should include a dedicated Biosecurity Management Plan in the respective EMPs.	Volume 2, Chapters 12, 13 & 14 (c13 & 14) Volume 3, Chapters 12 & 13	A Biosecurity Management Plan has been included in the Mine EMP (Volume 4 Appendix Q1). These requirements will however be applied across all project activities in accordance with relevant legislative and regulatory requirements. A Biosecurity Management Plan has also been included in both Volume 4 Appendix Q2 EMP (Offsite) and Volume 4 Appendix W EMP (Rail).
18	QDAFF Biosecurity Qld	Nature Conservation	Pest species	There is no training in the identification of priority weeds in the Project area (as prioritised in the Isaac Regional Council Pest Management Plan).	The EIS must include staff training for the identification of priority weed species including those not present on the site but also listed within the Isaac Regional Council Area	Volume 2 Chapters 5, 13 & 14 (s13.8.2, p13-27 & s14.8.2, p14-26)	Noted. Training requirements are identified in the Mine, Offsite and Rail EMP's. (SEIS Volume 4 Appendices Q1, Q2 and W). This includes training in regards to Pest and Weed management.
18	QDAFF Biosecurity Qld	Nature Conservation	Pest species	The recommendation for annual inspection for pest plants is insufficient as some plants reproduce more frequently (e.g. parthenium).	The EIS must ensure that inspections are undertaken at least twice per year.	Volume 2 Chapters 5, 13 & 14 (s13.8.2, p13-27 & s14.8.2, p14-26)	Noted. The Project EMPs include details for site inspections including pest and weed inspections and management programs. (SEIS Volume 4 Appendices Q1, Q2 and W)
18	QDAFF Biosecurity Qld	Nature Conservation	Pest species	There is no mention of the potential for introducing weeds to the aquatic environment via earthmoving and construction activities. Note: Hymenachne is a significant aquatic weed that is not yet present on site.	The EIS must include weed hygiene actions and surveillance strategies to mitigate the risk of introducing and spreading weeds into the aquatic environment.	Volume 2 Chapters 5, 13 & 14 (s13.23, p 13-154 & s14.23, p14-80) Volume 3 Chapters 5 and 13	Updates have been made to the Project's EMPs (SEIS Volume 4, Sections Q1 (Mine), Q2 (Offsite) and W (Rail)) to reflect the potential introduction of aquatic weed species and how these will be managed and controlled. Updates have been made to the Project's EMPs (SEIS Volume 4, Sections Q1 (Mine), Q2 (Offsite) and W (Rail)) to include operational control strategies for aquatic weed species.
18	QDAFF Biosecurity Qld	Nature Conservation	Pest species	The EIS makes no reference to the possible application of the Plant Protection Act 1989. For example, the whole of QLD is a pest quarantine area for grape phylloxera and as the Project sites are located in a grape growing area, the Project transverses the Special Control Zone (which is designated as a phylloxera exclusion zone). For further information refer to - http://www.daff.qld.gov.au/4790_20983.htm#Grape.	While it is unlikely that plant and machinery has been in contact with grape vines, general biosecurity awareness of plant risks amongst the workforce can reduce the risk of introducing pests of concern into QLD. The EIS must describe the compliance strategy for the requirements of the Plant Protection Act 1989 (e.g. s73 of the subordinate legislation Plant Protection Regulation 2002). For specific movement conditions refer to Inspector's Approval 4.6 (http://www.daff.qld.gov.au/documents/Biosecurity_MovingPlantsAndPlantProducts/IA_4.6.pdf)	Volume 2 Chapters 13 & 14 (c14)	Updates have been made to the Project's EMPs (SEIS Volume 4, Sections Q1 (Mine), Q2 (Offsite) and W (Rail)) to describe the measures to be employed in order to ensure best practice compliance with the requirements of the Plant Protection Act. A Biosecurity Management Plan has been included in both Volume 4 Appendix Q2 EMP (Offsite) and Volume 4 Appendix W EMP (Rail). Volume 4 Appendix Q1 EMP (Mine) has also been updated. All documents now include an overview of the legislative requirements including the *Plant Protection Act 1989* and compliance strategies included in Section 15.1.2 Table 15-3 of the EMP (Mine), Section 14.5.2 Table 14-3 of the EMP (Offsite) and Section 13.1.2 Table 13-3 EMP (Rail).
18	QDAFF Biosecurity Qld	Nature Conservation	Pest species	Omission and typographical error in “Land Protection Act: Management of Class 2 and 2 declared weeds”.	Edit this section to read as “Management of Class 2 declared weeds and pests animals”.	Volume 2 Chapters 13 & 14 (s14.5.4, table 14-8, p14-24)	Comments are noted.
18	QDAFF Biosecurity Qld	Nature Conservation	Pest species	There is no mention of waste management strategy to prevent pest animals being attracted to, and benefitting from onsite waste during construction and operations of off-site areas.	The EIS must specify in Performance Outcome (s14.21.4, p14-66) that waste left on-site is secure (i.e. pig-proof fences and secure bins) to prevent feral animals being attracted to and benefitting from such waste. Actions should be included in the Design and pre-construction (s14.21.5.1, p14-67) and Waste Management Inventory (s14.21.6, p14-68).	Volume 2 Chapters 10, 13 & 14 (s14.21.3, p14-64)	Updates have been made to the Project's EMPs (SEIS Volume 4, Sections Q1 (Mine), Q2 (Offsite) and W (Rail)) to provide greater detail around these matters and clear linkages to the waste minimisation and control processes to be implemented. Updates have been made to the Project's EMPs (SEIS Volume 4, Sections Q2 (Offsite) and W (Rail) to include a commitment to contain food scraps in securely sealed containers so not to attract feral animals.
18	QDAFF Biosecurity Qld	Nature Conservation	Pest species	Although the field study across the rail Project area found three declared species (Opuntia, Harrisia cactus and Parthenium) a number of other species have been prioritised by local governments across which the rail footprint spans. The EIS does not explicitly provide for preventing the introduction of new weed species.	The EIS needs to refer to the Pest Management Plans to identify priority species not yet present in the study area and align efforts with relevant local governments to prevent the introduction and spread of priority species into all study areas.	Volume 3 Chapter 13	Updates have been made to the Project's EMPs (SEIS Volume 4, Sections Q1 (Mine), Q2 (Offsite) and W (Rail)) to better describe the alignment of project plans with the priority weed species targeted by local government action. Updates have been made to the Project's EMPs (SEIS Volume 4, Section Q1 (Mine), Q2 (Offsite) and W (Rail) to reference the Isaac Regional Council Pest Management Plan.

18	QDAFF Forestry	Introduction	Relevant Legislation and Project Approvals	The section's title and content does not cover the requirements of the Forestry Act 1959.	Edit this section and replace the first 4 paragraphs with the following: "Depending on the location and existing tenure of the sites, various pieces of legislation may be triggered, such as the Forestry Act 1959. The Forestry Act 1959 provides for the sale and disposal of forest products and quarry material. All forest products and quarry materials on State land and some freehold land are the property of the State under the Forestry Act 1959. The Forestry Act 1959 is administered by the Department of Agriculture, Forestry and Fisheries (DAFF). Development approval under the Sustainable Planning Act 2009 will also be triggered for any quarry expansions or new quarries, depending on the location and nature of the proposed quarrying or extractive activity. Other approval requirements may be triggered, such as vegetation clearance permits under the Vegetation Management Act 1999 or an Environmentally Relevant Activity (ERA) (extraction) under the Environmental Protection Act 1994.	Volume 4 Appendix D (s2.9, p15)	SEIS, Volume 4, Appendices C1 (Project Approvals) and C5 (Quarry approval applications) includes the information requested.
18	QDAFF Forestry	Introduction	Relevant Legislation and Project Approvals		Under Section 236 of the Mineral Resources Act 1989, a holder of a Mining Lease is entitled to use sand, rock and gravel for the purposes of constructing infrastructure on the specific Mining Lease. Accordingly, a sales permit for use of quarry material within a specific Mining Lease area may not be required. A sales permit, however, may be required for the use and/or interference of forest products and/or quarry material taken offsite from a specific Mining Lease (i.e. removed from a Mining Lease, or removed from one Mining Lease and transported to, and used on, a contiguous Mining Lease or other lands).	Volume 4 Appendix D (s2.9, p15)	SEIS, Volume 4, Appendices C1 (Project Approvals) and C5 (Quarry approval applications) includes the information requested.
18	QDAFF Forestry	Introduction	Relevant Legislation and Project Approvals		Suitable arrangements (i.e. compensation, alternate access, etc) with DAFF and other affected parties must be negotiated and/or implemented where the Project, including proposed infrastructure and/or any proposed offset areas, will possibly sterilise, restrict the utilisation and/or adversely impact on access to currently exploited or other commercial deposits of quarry material and/or forest products administered under the Forestry Act 1959. Where commercial quantities of State-owned forest products administered under the Forestry Act 1959 (i.e. log, pole, fencing timbers, etc) will be interfered with (i.e. cleared, destroyed, etc) assistance to DAFF in arranging a timber salvage operation prior to any proposed vegetation clearing is required. Where a timber salvage operation is not possible compensation to may need to be paid to DAFF.	Volume 4 Appendix D (s2.9, p15)	SEIS, Volume 4, Appendices C1 (Project Approvals) and C5 (Quarry approval applications) includes the information requested.
18	QDAFF Forestry	Introduction	Relevant Legislation and Project Approvals		The relevant applications will be made to get and remove quarry material and/or to interfere with forest products once the locations, amount of material and any other relevant approval triggers have been determined. DAFF will be contacted to negotiate suitable arrangements if the Project will possibly sterilise, restrict the utilisation and/or adversely impact on access to currently exploited or other commercial deposits of quarry material and/or commercial quantities forest products, or interfere with forest products. As advised in section 2.6.3 (Site Civil Works) for the Project (Rail), the number of quarry and borrow pit locations are still under investigation, however the provision of the quarry material for the Project (Rail) do not form part of the Project (Rail) to be assessed as part of this EIS. Before any quarries or borrow pits will be developed appropriate lawful approvals will be followed to ensure proper assessment of that development is carried out.	Volume 4 Appendix D (s2.9, p15)	SEIS, Volume 4, Appendices C1 (Project Approvals) and C5 (Quarry approval applications) includes the information requested.
19	Dortins	Greenhouse Gas Emissions	Greenhouse Gas Emissions	These sections of the EIS deal with fossil fuel emissions and climate change. E.10.6 estimates that emissions generated by construction and operation of the mine will be relatively low. However the report fails to take into account the emissions from the 60 million tonnes of coal projected to be exported from the mine each year and burned in India. This mine intends to help perpetuate fossil fuel use in India for at least 90 years. The massive investment involved in the mine will contribute to the retardation of both the Australian and Indian energy economies, slowing down the development and adoption of clean, renewable energy sources. Sections E .10.1 and E .11.1 give details of how the mine infrastructure is to be protected from the expected temperature increases and weather events associated with climate change. The EIS, however, does not acknowledge that the mine project it self will contribute to continued carbon emissions for many decades, and that the burning of this coal will exacerbate climate change.	The true costs of this mine should be taken into account, including the carbon emissions caused by the burning of the exported coal. I urge you to reject the proposal for the Carmichael mine. This mine should not be built.	Vol 1 E.10.1; E. 10.6 and E.11.1 Vol 4 App T	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
19	Dortins	Greenhouse Gas Emissions	Greenhouse Gas Emissions	For these reasons, I believe that the EIS, and the project proposal itself are seriously flawed. Thank you for the opportunity to comment on this project.		Vol 1 E.10.1; E. 10.6 and E.11.1 Vol 4 App T	No response provided by proponent.

20	Oishi	Nature conservation	Bygana West Nature Refuge	Clearing of 88 % of RE vegetation in Bygana West Nature Refuge is completely unacceptable and I am led to believe that an alternative solution be supplied. The QLD Department of Environment and Heritage Protection notes that: **Nature refuge agreements** A nature refuge agreement (also called a conservation agreement): • is negotiated directly between you and the department and tailored to suit management needs; • enables sustainable production to continue in balance with the protection of the conservation values on your land; • can apply to the whole property or only to certain areas, depending upon the values and the future intent of the land; • owners of freehold land, leasehold land, State departments and local councils are able to enter into a nature refuge agreement; • is perpetual, attached to the land, and binds successive owners of the land. A perpetual agreement is the best means for you to ensure that your good land management practices and restoration work will be continued when future generations or when ownership changes	• The EIS should aim to identify possible ways to “avoid” the clearing of the Bygana West Nature Refuge. • Biodiversity/land Offsetting should not be readily proposed as a first line of tactic to “mitigate” the impact of the project. • Too often, protected areas become subject to clearing due to the evoking of economic mechanisms such as “Biodiversity Offsets Policy”. • There is no “Real” net gain in offsetting land for the like for like as enforcement on the conservation of the offset land is difficult and costly. • Preservation of existing nature refuge is more in line with the “spirit of conservation”.	Volume 3 Sections 5.4.2 Vegetation Clearing Loss of Vegetation and 5.2.2.2 State Matters of Conservation Significance	Submission noted.
20	Oishi	Nature conservation	Bygana West Nature Refuge	• Terminating an agreement Although there are provisions within the Nature Conservation Act for the termination of a nature refuge agreement, they would only be enacted under exceptional circumstances. A nature refuge is designed to provide permanent environmental protection of the values of the land; therefore, it is vitally important to uphold the commitment to preserving those values.		Volume 3 Sections 5.4.2 Vegetation Clearing Loss of Vegetation and 5.2.2.2 State Matters of Conservation Significance	Submission noted.
20	Oishi	Nature Conservation	Vegetation clearing	Section 5.2.2.2 also states that the Nature Refuge retains connectivity to remnant vegetation to the northwest, west, south and east. There are also four suitable fauna habitat types described in this section. Despite the survey results not showing “Essential Habitat”, a further study of the proposed project area may prove otherwise.	• The refuge provides habitats for EPBC and NC Act listed Endangered species such as Black-throated Finch, and may also provide “Essential Habitat” despite the survey efforts not finding such areas. • The area determined to be: “not critical to the survival of the species” is a flawed assumption since the cumulative impact of clearing in the Brigalow Belt has been extensive and thus will contribute to the dwindling habitat areas of these protected species collectively.	Volume 3 Sections 5.4.2 Vegetation Clearing Loss of Vegetation and 5.2.2.2 State Matters of Conservation Significance	Submission noted.
20	Oishi	Nature Conservation	Vegetation clearing		• Clearing of such an extensive area of remnant vegetation should not be regarded as “unavoidable”. • If a project proposes to clear such vast area of land, the project should not merely be approved through “mitigation measures” such as offsetting. • It is estimated that more than 90 % of the original cover of Brigalow has been cleared, and as a result, the Threatened Species Scientific Committee has recommended that the Brigalow be listed as an endangered community under the EPBC act2. Endangered ecological communities as such, should be protected in perpetuity and not be subjected to a flawed system of land offsets. • Least concern Regional Ecosystems are almost always subject to extensive clearing and justified by stating its low conservations status. • The Coordinator-General must realise that offsetting cannot be applied to remnant vegetation in perpetuity as the offset remnant vegetation will become scarce in the not too distant future.	Volume 3 Section 5.4.2 Vegetation Clearing – Loss of Least Concern Res	Submission noted.
20	Oishi	Cumulative Impacts	Environmental Values	The document states: “The REs within the Project Area and the approximate area to be cleared by each project in the Study Area is summarised in Table 8-8.” Table 8.8 is not a summary of RE clearing, it is described as “Table 8-8 Expenditure and Job Generation”. The description of Cumulative Impacts on Regional Ecosystems is poorly written as it does not discuss in detail factors to consider with regards to Critically Limited RE and its threshold level. Cumulative Impact of associated projects listed in the Cumulative Impact is potentially 65, 426.7 ha.	There is not sufficient information on the cumulative impacts of associated projects. • The Coordinator-General should not approve the project without understanding in depth, the extent of clearing in the Brigalow Belt as a whole. • The Coordinator-General must also understand the limits of Critically Threshold Regional Ecosystem and the implications of approving larges impact projects on remnant and non-remnant vegetation.	Vol 1 Section 8 Cumulative Impacts 8.3.2.1 Terrestrial Ecology – Regional Ecosystems (Cumulative Impact)	Adani has undertaken additional ecological investigations as part of the SEIS process. Please refer to SEIS Volume 4, Appendices H (Revised MNES Report, J1 (Revised Mine Ecology Report), J5 (Offsite infrastructure Ecological Assessment Report).
20	Oishi	Nature conservation	Vegetation clearing	The document states that there will be 1,921 ha of non-remnant vegetation to be cleared associated with the MIA and 3,227 ha of non-remnant vegetation to be cleared associated with the construction of off-site infrastructure. This is a total of 5,148 ha of vegetation to be cleared. The remnant vegetation is vegetation that meets the following criteria: • 50% of the predominant canopy cover that would exist if the vegetation community were undisturbed; and • 70% of the height of the predominant canopy that would exist if the vegetation community were undisturbed; and • composed of the same floristic species that would exist if the vegetation community were undisturbed. By continuously allowing extensive clearing of non-remnant vegetation, it essentially minimises the opportunity for forest regeneration and will not reach High-Value Regrowth status.	• Clearing of non-remnant vegetation should also be scrutinised more thoroughly as they are equally valuable for their potential to regenerate into a mature forest/ecosystem. • Coordinator-General must not overlook non-remnant vegetation as classifying it as unimportant based upon canopy cover and height of predominant canopy.	Vol 2 Section 5.3.2.1 Loss of Vegetation and Habitat for Terrestrial Species	The assessment of vegetation clearing has been undertaken in accordance with ToR and legislative requirements. Vegetation classification is determined by this legislation as are offset requirements.

20	Oishi	Climate, Natural Hazards and Climate Change	Climate change impacts	The Environmental Impact Statement for the Carmichael Coal Mine and Rail Project (the EIS) is deficient in respect of climate change impacts in the following key respects: The EIS fails to assess the values and resilience of the receiving environment: The resilience of the atmosphere to further emissions has already been exceeded and the atmosphere is approaching the critical threshold of 2^{o}C warming. However EIS does not acknowledge these facts and assess the proposed emissions in the context of the resilience of the receiving environment. (for Appendix of supporting information refer to original submission)	we recommend that the CG refuse the project or seek further information to address the deficiencies	Vol 2, section 3	Noted. Scope 3 GHG emissions are not included in government requirements or the TOR.
20	Oishi	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The EIS fails to include all emissions: As the Project proposes to burn the coal in power stations within the control of the proponent these emissions are scope 1 emissions and should be reported. However the EIS does not include an estimation of these downstream scope 1 emissions. (for Appendix of supporting information refer to original submission)	we recommend that the CG refuse the project or seek further information to address the deficiencies	Vols 2 and 3, section 8 Vol 4, App T and App AE	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
20	Oishi	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The EIS fails to assess cumulative emissions: As carbon dioxide accumulates in the atmosphere, the cumulative emissions for life of the Project are more relevant to the environmental harm caused than annual emissions. However the EIS fails to report the cumulative emissions from all sources. (for Appendix of supporting information refer to original submission)	we recommend that the CG refuse the project or seek further information to address the deficiencies	Vols 2 and 3, section 8 Vol 4, App T and App AE	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
20	Oishi	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The EIS fails to assess cumulative impacts emissions: The EIS fails to report the impacts cumulative emissions from all sources on climate change. (for Appendix of supporting information refer to original submission)	we recommend that the CG refuse the project or seek further information to address the deficiencies	Vols 2 and 3, sections 3 and 8 Vol 4, App T and App AE	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
20	Oishi	Introduction	Alternatives to the project	The EIS fails to identify feasible alternatives: The EIS fails to point out that solar power is to become cheaper than coal in India in 2017 making the need for the project insufficient to justify the above impacts. (for Appendix of supporting information refer to original submission)	we recommend that the CG refuse the project or seek further information to address the deficiencies	Volume 1, section 1.5	Comments are noted.
20	Oishi	Climate, Natural Hazards and Climate Change	Climate change impacts	Consequently the EIS fails to provide the climate change information necessary for the CG to assess the Project against the relevant statutory criteria. (for Appendix of supporting information refer to original submission)	we recommend that the CG refuse the project or seek further information to address the deficiencies	Vols 2 and 3, section 3	Noted. Scope 3 GHG emissions are not included in government requirements or the TOR.
20	Oishi	Greenhouse Gas Emissions	Climate change impacts	EIS fails to assess resilience of receiving environment For the reasons set out in Appendix A (Legislative Framework) the CG is required to consider the “character, resilience and values of the receiving environment” before imposing conditions under the Environmental Protection Act 1994 (Qld) (EP Act). The EIS fails to consider the resilience of the atmosphere to further emissions. As discussed in Appendix B (Climate Science) the atmosphere has already exceeded safe levels of carbon dioxide and is fast approaching the critical threshold of 2^{o}C warming. (for Appendix of supporting information refer to original submission)		Vols 2 and 3, section 3	Noted. Scope 3 GHG emissions are not included in government requirements or the TOR.
20	Oishi	Greenhouse Gas Emissions	Greenhouse Gas Emissions	EIS fails to include all emissions The EIS purports to include all scope 1 emissions as defined by The Greenhouse Gas Protocol – A Corporate Accounting and Reporting Standard (2008, Revised edition) (the GHG Protocol) 1 as “Direct GHG emissions occur from sources that are owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment.” However, because the Project is premised on the proponent controlling the supply chain and burning the product coal in their power stations in India, the burning of the product coal would also fall within scope 1 emissions for the proponent under the GHG Protocol. The EIS fails to include these downstream scope 1 emissions. These emissions are relevant to the assessment of the CG because, for the reasons set out in Appendix A (Legislative Framework), the CG must also consider the indirect results of the activity under the EP Act. (for Appendix of supporting information refer to original submission)		Vols 2 and 3, section 8 Vol 4, App T and App AE	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.

20	Oishi	Greenhouse Gas Emissions	Greenhouse Gas Emissions	EIS fails to assess cumulative emissions As set out in Appendix B (Climate Science), carbon dioxide emissions accumulate in the atmosphere, making the total emissions over the life of the project more relevant than annual emissions. The EIS estimates Scope 2 and some Scope 1 emissions for the life of the project which total approximately 206 million tonnes CO_2-e^2 but neglects to estimate the downstream scope 1 emissions mentioned above. The downstream scope 1 emissions are estimated to be 8.655 Billion tonnes CO_2 over the life of the project using the methodology under the National Greenhouse and Energy Reporting Act 2007 (Cth) (NGER Act) and assuming a total output quantity of 4,772.1mt of product coal, an averaged energy content of 20.5625 GJ/tonne, and an emission factor of 88.2. Therefore the total emissions including downstream scope 1 emissions are approximately 8.861 Billion tonnes CO_2–e which, for comparison is: - More than the annual emissions from all the cars on earth; - More than 15 years' worth of Australia's current national emissions; and - 1.38% of the remaining global emissions budget to give a 75% chance of staying below a scenario of 2°C warming. (for Appendix of supporting information refer to original submission)		Vols 2 and 3, section 8 Vol 4, App T and App AE	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
20	Oishi	Greenhouse Gas Emissions	Climate change impacts	EIS fails to assess cumulative impact of emissions For the reasons set out Appendix A (Legislative Framework) the CG must consider the environmental harm caused by the Project "whether the harm results from the activity alone or from the combined effects of the activity and other activities or factors". Yet the EIS fails to consider the cumulative impacts of climate change or the contribution of the proposed Project to climate change. Preliminary analysis indicates that the Project is likely to result in a measurable increase in global temperatures and sea levels. It will also contribute to the loss of the Great Barrier Reef which contributed an estimated $5.4 billion to Australia's economy in 2006-07, and provided full time employment for approximately 53,800 people in Australia. The global cost of the contribution of the project to climate change is approximately $70 billion. These external costs due to climate change are not accounted for in the EIS. (for Appendix of supporting information refer to original submission)		Vols 2 and 3, section 8 Vol 4, App T and App AE	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
20	Oishi	Introduction	Alternatives to the project	EIS fails to identify feasible alternatives The Project relies on data from the World Energy Outlook report of 2008, and appears to ignore more recent developments. In particular solar photovoltaics are expected to become cheaper than coal in India in 2017. Thus there is not sufficient need for this Project to justify the environmental impacts from climate change outlined above. (for Appendix of supporting information refer to original submission)		Vol 1, section 1.5	Comments are noted.
21	Macmines Austasia P/L	Draft Offset Strategy	proposed offset areas	The proposed Draft Offset Strategy includes an assessment of the offset potential of the Moray Downs property. The EIS states that Moray Downs may meet a significant portion of the project offset requirements for a number of protected flora and fauna species. A portion of the Project China Stone proposed Mining Lease Application (MLA) area overlies the Moray Downs property. Attached Figures 2-4 show the location of the Project China Stone proposed MLA area, in relation to the areas of Moray Downs which were assessed for potential offsets. The securing of offsets within land underlying the Project China Stone proposed MLA area will have a significant impact on the viability of the project.	MacMines request that no offset areas are secured or approved on land underlying the proposed Project China Stone MLA area. The securing of such offsets would significantly constrain the proposed mining activities within the MLA area and is likely to make the project not economically viable.	Volume 1, Section 9: Draft Offsets Strategy; and Appendix AH: Carmichael Coal Mine and Rail Project Environmental Offset Strategy	Adani will consult with China Stone during the finalisation of the offset plan. Please refer to the revised Offsets Report in SEIS Volume 4 Appendix F.
21	Macmines Austasia P/L	Transport	Road impacts	Road access to the Carmichael (Coal Mine) Project site is via approximately 90 km of unsealed council roads, including Moray-Carmichael Road and Elgin-Moray Road, which link the project site to the Gregory Development Road. The EIS states that as the Moray-Carmichael Road passes through the proposed mine footprint, it will need to be temporarily realigned while mining takes place in the central part of the mine (refer to attached Figure 5). Once rehabilitation in this area is completed, Adani propose to establish a permanent road alignment established as close as possible to the existing alignment. Road access to the Project China Stone proposed MLA area is via the same unsealed council roads, including Moray-Carmichael Road, and this route will likely be the primary access for project-related vehicular traffic. As such, any proposed realignment of Moray-Carmichael Road or the other unsealed council roads along this route, may affect access to the Project China Stone site.	MacMines request that any proposed realignment of Moray-Carmichael Road, or other unsealed council roads which provide access to the two projects, takes into account the use of the roads for access to the Project China Stone site. In particular, access to the Project China Stone site must be maintained at all times. MacMines will commence discussions with Adani regarding the road upgrade and realignment, and request to be involved in any decisions on such.	Volume 2, Section 2: Description of the Project Volume 2, Section 11.3 - transport	Comments regarding MacMines access to the China Stone site have been noted. Adani will consult with MacMines and relevant stakeholders prior to Moray-Carmichael Road upgrades and realignment.

21	Macmines Austasia P/L	Introduction	Relationship to other projects	Adani is in discussions with the Coordinator General regarding a declaration of land relating to the Carmichael (Rail) Project as a State Development Area (SDA) under the SDPWO Act. Mac Mines is currently engaged in discussions with Adani in relation to cooperation on an integrated rail alignment which needs to include a direct connection to the Project China Stone project site. The current proposed Project China Stone off-lease rail alignment traverses the northern end of the Carmichael (Coal) Project site. MacMines will require access to the proposed rail alignment within the proposed Carmichael MLA to ensure the viability of the proiect.	MacMines request that if the Coordinator General intends to declare a SDA over land relating to the Adani rail alignment, that the proposed MacMines alignment is also included in this declaration to ensure the viability of the project.	Volume 4, Appendix D: Project Approvals and Planning Assessment	Comments are noted.
22	O'Sullivan	Water resources	Groundwater	Throughout this EIS there is no mention of the larger Mellaluka Spring beside the homestead and the flowing bore. These are fed by the GAB and are on this Adani lease	A Study, similar to the proposed Doonomabulla Springs investigation needs to be instigated before any mining activity commences to discover the impact on these unique environments and on the GAB. So much of the water used in our agricultural industry is sources from the GAB	Volume 2 Section 6	Water quality studies have been undertaken for the Doongmabulla springs complex (May and June 2012) and Mellaluka springs complex (April 2013) to provide: 1. Information about the potential groundwater sources to the springs; 2. A set of baseline quality data. The studies are summarised in an additional section to Volume 4 Appendix R (2.4 Doongmabulla and Mellaluka Spring Sampling) and discussed in Volume 4 Appendix R Section 4.8.1 - Doongmabulla Springs and in Section 4.8.2 - Mellaluka Springs. A more detailed map showing the location of Mellaluka springs in relation to Mellaluka homestead has been added to Volume 4 Appendix R Section 4.8.2.
22	O'Sullivan	Water resources	Groundwater	There seems to be very little known about the Mellaluka Springs mentioned in this Study. What is apparent however is the fact that they will be extremely badly affected by this mining activity. This is not an acceptable outcome.	before any mining activity is commenced a thorough investigation needs to be carried out on these springs to determine their ecological significance and the bearing that their possible disappearance has on the underground water supply.	Volume 2 Section 6.4.4.2	Water quality studies have been undertaken for the Doongmabulla springs complex (May and June 2012) and Mellaluka springs complex (April 2013) to provide: 1. Information about the potential groundwater sources to the springs; 2. A set of baseline quality data. These studies are summarised in an additional section to Volume 4 Appendix R (2.4 Doongmabulla and Mellaluka Spring Sampling) and discussed in Volume 4 Appendix R Section 4.8.1 - Doongmabulla Springs and in Section 4.8.2 - Mellaluka Springs. Ecological studies have been undertaken for the Doongmabulla springs complex (2012 and 2013) and Mellaluka springs complex (April 2013).
22	O'Sullivan	Climate, Natural Hazards and Climate Change	Flooding	During the wet season major flooding can occur in this region. Nowhere in the EIS is there any mention of a study to determine the affect that mine infrastructure and landscape changes will have on the flow of water during flooding and if it will impede the flow of the receding water	An assessment needs to be undertaken to determine how the changes to the landscape could exacerbate flooding and how to minimise the impact.	Volume 2 Section 4	Comments regarding flood impacts from landscape changes have been noted. Flood modelling has been reviewed against the detailed mine plan and detailed in the Revised Mine Hydrology Impact Assessment Report (refer to SEIS Volume 4, Appendix K5).
23	Cobb	Water resources	Groundwater	The current EIS states Mellaluka as having 2 springs to the north of the homestead. There is in fact another larger spring located right at the homestead. This spring is permanent and of major significance to the local environment (namely, it is home to over 100 species of birdlife}. As it is not listed by Adani, there has been no accurate assessment carried out on the spring and surrounding area to determine impact expected from mining activity.	Assessment of ecology and hydrogeology of the spring to be carried out before mining activity begins to determine the full long term impact of mining.	Volume 2 Section 6.2.6.2	Water quality studies have been undertaken for the Doongmabulla springs complex (May and June 2012) and Mellaluka springs complex (April 2013) to: 1. Identify spring locations 2. Collect information about the potential groundwater sources to the springs 3. Collect a set of baseline quality data. These studies are summarised in an additional section to Volume 4 Appendix R (2.4 Doongmabulla and Mellaluka Spring Sampling) and discussed in Volume 4 Appendix R Section 4.8.1 - Doongmabulla Springs and Section 4.8.2 - Mellaluka Springs. Maps showing locations of Mellaluka springs in relation to Mellaluka homestead in Volume 4 Appendix R have been revised to show homestead in correct location. Ecological studies have been undertaken for the Doongmabulla springs complex (2012 and 2013) and Mellaluka springs complex (April 2013).
23	Cobb	Water resources	Groundwater	The 2 Mellaluka springs marked on the current EIS maps are very inaccurate in their locations therefore making any judgement of expected impact also inaccurate.	Accurate locations of the springs to be carried out and remarked on the maps provided. Assessment of ecology and hydrogeology of the springs to be carried out to determine the full long term impact of mining activity.	Volume 2 Section 4 Map 4.10	Maps showing locations of Mellaluka springs in relation to Mellaluka homestead in Volume 4 Appendix R have been revised to show homestead in correct location.
23	Cobb	Water resources	Groundwater	As shown in Figure 4-3 and 4-4 there is very limited data collected and presented to establish an understanding, and therefore expected mining impact, on the hydrogeology of the area south of the Carmichael River. In particular, the aquifers which we rely on for agricultural and personal use have not been adequately explored to enable an assessment of mining impacts.	In-depth exploration and monitoring of hydrogeology of the area south of the Carmichael River	Volume 14 Appendix R Mine Hydrogeology Report	Additional groundwater monitoring has been installed at ten sites in the area to the south of the Carmichael River during 2013. Details on the monitoring network reported in Volume 4 Appendix R 2.3.2 Groundwater Monitoring Network Installation have been updated to reflect the additional locations. Additionally, a longer term monitoring program is being developed in accordance with project commitments to provide n in-depth understanding of the baseline characteristics of these resources, Refer to Volume 4 Appendix R.
23	Cobb	Water resources	Groundwater - water supply	As stated in the EIS, even with limited data collected concerning the aquifers, we are to expect impact on our current water supply (especially the aquifers) as significant drawdown will occur. This will significantly affect our primary production as we rely heavily on the aquifers for agricultural and personal use. However, Adani is yet to negotiate a compensatory deal in regards to the decrease of water supply caused by the mining activity.	Adani to acknowledge the impact of the decreased water supply their operations will cause and negotiate a compensatory deal with the affected properties before mining activity commences.	Volume 2 Section 6	Comments are noted.
23	Cobb	Water resources	Flooding	Throughout the EIS it is stated that there will be changes made to the landscape and flow of surface water by the mining activity and construction of the railway line. There are many properties (including Mellaluka) in the surrounding low level areas which are already affected each wet season by flooding surface water. No assessment has been carried out to determine whether the infrastructural changes made by the mine will affect the flow of water in the wet season and, more importantly, restrict the flooding water from receding at normal rates.	Carry out accurate assessment on surface water flow and the impact of changing the landscape and water flow on the surrounding areas, especially in regards to the wet season and flooding surface water.	Volume 2 Section 4	The EIS flood assessment has been updated (SEIS, Appendix K4, Preliminary Flood Mitigation and Creek Diversion Report). Impacts of the changes in flood duration, depths and velocities are discussed in SEIS Appendix K5 (Revised Mine Hydrology Impact Assessment Report)

23	Cobb	Social	SIMP	As stated in the EIS, Adani will be relying on mostly FIFO labour. While this doesn't impact the local towns and roads as much as DIDO labour, there will still be an impact with local businesses supplying required goods and services. As yet, there is no commitment by Adani to maintain the roads (major and minor) or to ensure money is put back into the community which they are affecting.	A plan made and publically submitted by Adani as to how they will support and contribute to the local community, especially in regards to the roads.	Volume 1 Section 03 - Social Impact Assessment	The LIPP states Adani's commitment to local buying and participation, this is outlined in Appendix D1 Section 8.7 and SIMP SEIS Volume 4 Appendix D1 Section 3.6
24	Powerlink Qld	General comment	General comment	Powerlink notes that there are several areas of the EIS that potentially relate to Powerlink assets and activities, or where the EIS makes comment about the provision of electricity network assets or connection to Powerlink assets.	Powerlink's network is planned and operated to meet reliability standards set out in the National Electricity Rules, the Queensland Electricity Act and Powerlink's Transmission Authority, at lowest long-run cost. Any extension to Powerlink's transmission network must be undertaken following detailed investigations and comply with relevant legislation.	EIS Volume 1 - sections 1 and 2	Adani are continuing to investigate options for the provision of power to the mine. Once a preferred option is identified it will be developed in accordance with the relevant legislative requirements.
24	Powerlink Qld	General comment	Relationship to other projects	In relation to any transmission network extension to supply electricity to the Carmichael Coal Mine and Rail Project, Powerlink advises that it has not committed to these works. Accordingly, Powerlink is unable to make any comment as to the practicality, viability, capacity and/or timing or otherwise of transmission line assets or connections as detailed in the EIS.	The EIS wording should be reviewed to ensure it does not imply any commitment by Powerlink at this point in time; however Powerlink welcomes discussion with Adani regarding a potential future arrangement for Powerlink to deliver this infrastructure and provide a mutually acceptable agreement.	EIS Volume 1 - 1.6.2 Power Infrastructure	Adani are continuing to investigate options for the provision of power to the mine. Once a preferred option is identified it will be developed in accordance with the relevant legislative requirements.
24	Powerlink Qld	Introduction	Relationship to other projects	this section mentions connection options from Powerlink's Surbiton Hill 275kV, Lilyvale 275kV, Moorvale 132kV and Strathmore 275kV Substations as well as a Pentland Copperstring 330kV Substation option. The EIS states "a transmission line will be installed by either Powerlink or Adani to meet Project requirements. Whichever option is implemented it will be able to supply multiple mines in the Galilee Basin including the Project."	Powerlink notes that Adani has stated a transmission line will be installed by either Powerlink or Adani. It should be highlighted this is not a committed project for Powerlink planning purposes. Powerlink is unable to make any comment or undertaking as to the ability or capacity of a transmission line to service multiple mines in Galilee Basin. Should Powerlink commit to this project it will carry out such assessments and approvals that are necessary to complete the project and fulfil its statutory obligations. This process will be undertaken separate to any study or EIS undertaken by Adani for the purpose of the mine.	EIS Volume 1 - 1.6.2 Power Infrastructure	Adani are continuing to investigate options for the provision of power to the mine. Once a preferred option is identified it will be developed in accordance with the relevant legislative requirements.
24	Powerlink Qld	Introduction	Relationship to other projects	Adani states that it is investigating power supply options and "as the preferred option has yet to be identified, no impact assessments have been undertaken. Impact assessment will be undertaken when the preferred option has been determined."	see response to the point above	EIS Volume 2 - 2.13.6 Power Services and EIS Volume 3 -13 Draft EMP - 2.8.7 Energy and Telecommunication Easements	Adani are continuing to investigate options for the provision of power to the mine. Once a preferred option is identified it will be developed in accordance with the relevant legislative requirements.
24	Powerlink Qld	Project - Rail	Project location	EIS notes that the nearest electricity line to the proposed project (rail) is an existing high voltage electricity line which runs in a north south direction, parallel to the existing Wotonga - Blair Athol Mine railway line.	The EIS should be modified to clearly identify this as the Powerlink Moranbah to Mt McLaren transmission line.	Vol 3, Secitons 2.2, 2.5 EIS - several other locations	Comments are noted.
24	Powerlink Qld	Project - Rail	Project location	This section describes the rail line from the mine which connects to the existing Blair Athol Aurizon line about 23km SW of Moranbah, about 4km SW of the Powerlink Moranbah South substation. The rail line does not undercross a Powerlink transmission line, Construction access would have to meet appropriate clearances as it would likely undercross the Powerlink Moranbah to Mt McLaren transmission line. See also Fig 2.5 sheet 25.	Powerlink notes that the project is not within, adjacent to or crossing existing or planned Powerlink assets. The closest point of the project to existing or planned Powerlink assets is the east most point where the project rail line is proposed to connect to the Blair Athol Aurizon line. While the project is a few hundred metres from Powerlink's Moranbah to Mt McLaren transmission line, Powerlink would like to ensure that all project related work, vehicles, plant or equipment that may access under or alongside the transmission line in the area will be subject to a mutually agreed co-use agreement. Any modifications to Powerlink assets that may be requested by Adani (such as increasing conductor to ground clearance or reconstructing the line) will require investigation by Powerlink as to the scope, timing and requirements of such works and will be at the cost of the proponent. The project proponent must consult with Powerlink if the scope of work changes and results in an increased impact on Powerlink assets. The proponent must work to eliminate the adverse effects of such changes.	EIS Volume 3 - 2.5 (Rail) Project Components	Comments are noted.
24	Powerlink Qld	Project - Rail	EMP	Recommendations made in the Rail Land Use report such as the statement that "potential impacts of existing power lines in the vicinity of the Project (Area) will be managed through a Construction Management Plan (CMP) (refer Volume 3 Section 13 Draft Environmental Management Plan)" do not appear to have been carried forward into the Draft Environmental Management Plan (EMP).	The EIS recommendations should be included in the EMP. Powerlink should be consulted in the preparation of supplementary EIS information to determine mutually agreed steps to be inserted into the revised Draft EMP to manage potential adverse impacts to Powerlink assets.	Vol 3, section 3.5.3, section 13	Comments are noted and included in the EMP - Rail SEIS Volume 4 Appendix W)
25	Doctors for the Environment Aust inc	Economics	General comment		The EIS should not be accepted without further studies, particularly health and economic assessments; evidence is not presented that the project has net benefit to the Australian community.	Vol 1, Section 6	The economic assessment was undertaken in accordance with the Project ToR and assessment requirements of Government Agencies.
25	Doctors for the Environment Aust inc	Greenhouse Gas Emissions	Greenhouse Gas Emissions		The greenhouse emissions from the proposed project will be causative factor in future extreme weather events in Queensland and Australia. The resulting health and economic impacts of climate change must be included in the EIS.	Vol 2, Section 8 Vol 3, Seciton 8 Vol 4, App T and App AE	Comments are noted.
25	Doctors for the Environment Aust inc	Cumulative impacts	General comment		Within the context of the proposed development of several major mines in the Galilee Basin there must be a basin-wide study of cumulative impacts before any further mines proceed.	Vol 1, section 8	Cumulative impacts related to other developments near the Project (Mine) are discussed further in SEIS Volume 1 Section 8 Cumulative impacts.
25	Doctors for the Environment Aust inc	General comment	Responsibility for assessment		The Carmichael project should be assessed independently of proponent and state government.	n/a	The Project assessment is in accordance with relevant State and Commonwealth legislative requirements.

25	Doctors for the Environment Aust inc	Greenhouse Gas Emissions	Greenhouse Gas Emissions	This project is one of the largest proposed coal mines in Queensland, producing 60 million tonnes per annum from a mine site 160km northwest of Clermont. The coal will be exported through either Abbot Point or Hay Point. There is a sense of unreality with this proposal; the Executive Summary of which makes statements such as Page E-xv "The management and mitigation measures employed through the construction, operational and decommissioning of the Project (Mine) adequately safeguard against risks associated with natural hazards and climate change" How can this be, when the mine will cause a measureable impact in world emissions? E-ix "The distribution of the impacts on the local and State economies are mostly positive, with further positive impacts felt nationally and internationally". How can this be when externalities are not costed and indeed there is no overall economic assessment of true value to the community? E-iii "Adani has sought to deliver community benefit from its business involvement and is committed to environmental protection and sustainable management of its operations and activities".	If Adani is committed to sustainability then this project cannot proceed. Carbon budgets suggest that we need to leave most of the remaining fossil fuels in the ground, so the predicted mine outputs over 90 years is not environmentally or economically sustainable in a national or international perspective.	Vol 1, Section 1.1	Comments are noted.
25	Doctors for the Environment Aust inc	General comment	General comment	Doctors for the Environment Australia made a submission on the draft TOR; many the recommendations made have not been incorporated.		N/A	Comments noted. The ToR were finalised by the Coordinator General in accordance with legislative requirements.
25	Doctors for the Environment Aust inc	Hazard and Risk	Public Health and Safety	Here we detail the health impacts of the project which we recommend should be readdressed and their economic costs considered in an overall value of the project. Health Impact Guidelines as detailed in 2001 are part of the EIS process http://www.health.gov.au/internet/main/publishing.nsf/content/35F0DC2C1791C3A2CA256F1900042D1F/$File/env_impact.pdf.	Health Impact Assessment (HIA) should be included in this EIS. The evidence for inclusion of health impacts is decided by means of a screening and scoping processes by the state government and it would be important to detail the criteria by which some health impacts were excluded. This decision should be given at the commencement of the EIS, otherwise health experts are condemned to search the document for potential impacts—and indeed there are many- but they are not identified as such. There is a strong case for the potential health impacts to be brought together in one section. This point can be illustrated by an analysis of Chapter 8 the most important health impact of the project, yet it is not considered as a health issue.	Vol 2 and Vol 3, sections 8 and 12	Health impacts have been addressed to the satisfaction of Queensland Health in accordance with the ToR.
25	Doctors for the Environment Aust inc	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The exclusion of Scope 3 emissions by government regulation conveniently allows both proponents and Australian governments to avoid responsibility for global harms caused by a project; the pollution is not caused in Australia so it is someone else's problem. However this convenient regulation does not allow proponents to avoid this assessment completely for it is evident that the harms caused by these emissions are now affecting Australia through accelerating climate change; they should be included in the HIA. It is notable that the word "health" is not included in Chapter 8. The World Health Organization (WHO) views climate change as one of the biggest health threats of this century, not only can there be direct loss of life and injury from extreme weather events but the fundamental determinants of health, access to appropriate air, water, food, shelter and freedom from disease are also indirectly threatened by our surrounding climate and subsequent weather events. The United Nations has repeatedly emphasised that climate change threatens all our goals for development and social progress and is a true existential threat to the planet.	Surely in the light of compelling scientific data on the increasing frequency and intensity of extreme weather events it would be accepted by the Queensland government that there is a relationship to flooding events in recent years which are costing lives and billions of dollars? In which case this issue should be part of a comprehensive HIA process and these probabilities should be included in the economic assessment as to the overall value of the project to the Australian community.	Vol 2, Section 8 Vol 3, Seciton 8 Vol 4, App T and App AE	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
25	Doctors for the Environment Aust inc	Greenhouse Gas Emissions	Greenhouse Gas Emissions	**Deaths and injuries from climate change** The project emissions can be calculated from the combustion of the mined coal wherever this takes place. The resulting rise in world temperature can be calculated as a proportion of global emissions. Based on extrapolation WHO figures there are 300,000-400,000 deaths per annum from climate change http://www.ecologicalinternet.org/shared/reader/welcome.aspx?linkid=223935&keybold=climate%20AND%20%20solution%20AND%20%20intergenerational and so the proportion of this figure due to the project each year and over the life of the mine can be calculated. Estimates of illness and injury can be made.	A proportion of this health impact now falls upon Queensland and all Australia; it should be calculated and included in the HIA.	Vol 2, Section 8 Vol 3, Seciton 8 Vol 4, App T and App AE	Noted. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
25	Doctors for the Environment Aust inc	Greenhouse Gas Emissions	Greenhouse Gas Emissions	**Economic loss from climate change** These losses are relevant for they also have health impacts. The IBIS World report on the economic impact of the 2011 Queensland floods provided an estimate of $10b from impacts on construction, tourism, transport, mining and agriculture. The costs of health impacts including deaths were not mentioned and were presumably absorbed into existing health and social services. Budget deficits in Queensland have been compounded by these and other floods, and health services have been cut along with many other government commitments. Again this is a health impact.	In the overall economic assessment of this project, the positives and negatives that will allow the community to see the true value of the project must be detailed. In this regard, the statement on page Page E-1 is questionable "If the Project does not proceed it would likely lead to Adani's demand for coal being met outside of Australia and the benefits of significant economic investment would not be realised". **Firstly,** the drug dealer's defence is inappropriate- If I don't supply them someone else will. The International Energy Agency has indicated that other supply chains to replace current coal supplies could not deliver within time lines and the demand for renewable energy would increase. **Secondly** the EIS cannot make the claim of any overall benefit without full health and economic assessment. This should be considered in 6.	Vol 2, Section 8 Vol 3, Seciton 8 Vol 4, App T and App AE	Noted. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.

25	Doctors for the Environment Aust inc	Economics	Economic impact assessment	"The potential of the Project to produce significant positive impacts on the local and State economies is substantial." This assertion has not been substantiated. The costs of short and long term heath, adverse social and environmental impacts have not been calculated. Therefore the true value to the community cannot be assessed.	We recommend the EIS be resubmitted with this information. There should be an independent economic assessment of the project based on cost benefit analysis, supported by economic impact assessment. Economic impact assessment is not a substitute for cost benefit analysis. 'Independent' because there is clearly a conflict of interest in that a state government heavily in debt will receive income soon and the debt from health, social and environment impacts will be delayed or passed to others. The community needs to know the complete balance sheet. The use of cost benefit analysis by independent consultants would follow the practice of the Commonwealth, the Department of State Development, Infrastructure and Planning and is recommended by the Business Council.	Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
25	Doctors for the Environment Aust inc	Social	Social Impact Assessment	The Social Impact Assessment process is appropriate. However we note;- "The significance of potential impacts was determined based on the severity, likelihood, duration, spatial extent and importance of the impact. Information was sourced through SIA consultations, a desktop literature review, and information from discussions with landholders held by Adani."	It is important that the sources of information be referenced by source so they can be corroborated and any essential studies omitted can be identified.	Vol 1, sections 3 and 4 Vol 4, App F	Specific landholders cannot be referenced for privacy reasons. The impact assessment is based on a combined understanding using triangulation of information from various sources. Information sources are listed in the Reference list provided at the end of the SIA.
25	Doctors for the Environment Aust inc	Hazard and Risk	Public Health and Safety	There are also important health implications in addition to those already identified, such as increases in the need for health services. In this regard we draw attention to the health, social and economic costs of Fly-in Fly-out workforce (FIFO). "It is expected that the Project (Mine and Rail) will reach peak workforce in 2015 with approximately 3,700 workers" "It is expected that almost all workers will be recruited on a FIFO basis, flying in and out of one or more nominated collection points in population centres on the east coast of Queensland. This does not mean that workers will have their permanent residence at these locations. Workers may reside elsewhere in Queensland or Australia and travel independently to the nominated collection point, from where transportation to the proposed mine will be undertaken by Adani. Workers and their families may choose to relocate to the collection points, but this would be at the worker's discretion and not directed by Adani"	This issue is addressed in 4;- (refer response for 25N) -	Vol 2 and Vol 3, section 12	Please refer to Revised SIMP in Volume 4 - Appendix D2.
25	Doctors for the Environment Aust inc	Social	SIMP	This is comprehensive and has used lessons learned from earlier FIFO systems in Australia. This is an extremely complex topic and an assessment of the 234 submissions to the Senate Inquiry into the use of 'fly-in, fly-out' (FIFO) workforce practices in regional Australia provides some indication of the likely short and long term health impacts. These are well documented and include the precipitation of mental illness, suicide and family breakdown.		Vol 1, sections 3 and 4 Vol 4, App F	Comments are noted and are incorporated in Workers Health and Safety Plan as mentioned in the updated SIA (SEIS Volume 4, Appendix D1, section 7.6.4) and updated SIMP (SEIS Volume 4, Appendix D2, section 3.4).
25	Doctors for the Environment Aust inc	Economics	Economic impact assessment	In relation to 6. Economies the cost of FIFO must be calculated in the long and short term and the apportionment to state and national budgets. Only complete analysis can allow for judgement as to whether this project will have net profit to the community.		Vol 1, section 6	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
25	Doctors for the Environment Aust inc	Cumulative impacts	Greenhouse Gas Emissions	The section is introduced as follows "Cumulative impacts can be defined as successive and combined impacts of one or more projects upon the society, economy and the environment (Franks, DM, Brereton, D, CJ, Sarker, T and T, Cohen, 2010)" This report was funded by the Australian Coal Industry. The report avoids consideration of the most important cumulative consideration – green house emissions. The credibility of the Carmichael EIS is severely tarnished by the summary which indicates that green house emission have low significance and lists the project as having an economically positive impact when there are no definitive studies on either. As indicated by Minister Burke in some recent statements, cumulative impacts are important for Basin developments. http://www.environment.gov.au/minister/burke/2012/mr20121010.html. We believe this should apply to cumulative emissions and to long term economic impact and value to the community.		Vol 1, section 8	Noted. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
25	Doctors for the Environment Aust inc	Cumulative impacts	Environmental Values	The statement in the Executive Summary that "The Great Barrier Reef is downstream of the Project via the Belyando River and will not be impacted by the Project." has no validity. Studies have not been done to assess the impact of the drainage of the entire catchment into coastal waters. A cumulative impact of Carmichael on the Reef is already identifiable; the proportion of port expansion, dredging and increased shipping to accommodate the export from Carmichael.		Vol 1, section 8	Cumulative impacts from dredging and port activities are outside the scope of this EIS and have not been identified within the Project ToR. Therefore they have not been included within the assessment.

26	QLD Health	Water Resources	Water supply	Queensland Health notes that the water management system and the proposed Management and Mitigation Measures within S6.4.2.2 (pg 101). It is noted that the mine site waste water (including effluent from the sewerage treatment plant) is treated and stored on-site and that the treated waste water is intended to be recycled for on-site use. While it is understood the treatment processes may reduce the concentration of some contaminants, information on the direct and indirect human health risk of exposure to waste water has not been provided. 1. Queensland Health has concerns regarding the potential for offsite human exposure should waste water be released or escape. Examples include the potential for contaminants to reach downstream drinking water sources or other reservoirs where people may be exposed through dermal contact or farming activities.	The proponent should provide further clarification in relation to; 1. Managing recycled water activities on-site highlighting compliance with the Australian Guidelines for Water Recycling - managing health and environmental risks (Phase 1) (2006) and (Phase 2) released by the National Environmental Protection Council. This document provides guidance on water quality and management planning for recycled water. 2 . Managing waste water discharges so as to protect downstream drinking water sources or other reservoirs in the event of an off-site discharge.	Volume 2, Chapter 6 Water Resources, Chapter 13 EMP (mine)	Drinking water has been added as an environmental value when calculating new water quality discharge objectives for Carmichael River. These objectives have been considered in creating the site discharge objectives (SEIS Volume 4, Appendix K3). This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.3.5 and in Controls section in SEIS Volume 4, Appendix Q1 Mine EMP Table 9-3.
26	QLD Health	Water Resources	Water supply	Queensland Health has also noted that the proponent proposes to extract ground water for industrial and potable use (S6.5.3) and that the site has an on-site water treatment plant. This plant must provide water that complies with the *Australian Drinking Water Guidelines* published by the National Health and Medical Research CounciL. Queensland Health is however unaware and therefore concerned as to whether the potable water supply, once treated at the plant, is appropriately tested and stored on-site as to ensure its quality and protect it from cross-contamination and other potential contaminants.	3. Storing, re-suppling and protecting (particularly from cross contamination) drinking water, to ensure water quality standards meet the *Australian Drinking Water Guideline 2004* (ADWG). The proponent will also need to determine whether they will be regarded as a drinking water service provider as regulated by the *Water Supply (Safety and Reliability) Act 2008* and the *Public Health Act 2005*. If the proponent is not a drinking water service provider, then the proponent needs to develop a water quality management system.	Vol 2 Chapter 6 Water Resources -Mine, Chapter 14 EMP (off-site)	Both the treatment of water for drinking and the storage on-site of potable water will be undertaken in accordance with the Water Supply (Safety and Reliability) Act 2008 and the Australian Drinking Water Guideline 2004. Management plans have been developed as part of development applications for the workers accommodation camps. Refer to revised offsite EMP in SEIS Volume 4, Appendix Q2.
26	QLD Health	Noise and Vibration	Noise and Vibration	Noise generated by Mining Operations The proponent within S9.1. 7.4 (pg 9-10) describes the sleep disturbance criteria (the Environmental Protection (Noise) Policy 2008 $L_{A1,adj,1hr}$ criterion) relevant for mining operations, however no assessment appears to have been conducted within S9,3,3,1 (pg 9-21) against the $L_{A1,adj,1hr}$ criterion, A statement is made within this section that mining operations don't adversely affect sleep at sensitive receptors (ie comply with night time criteria). However, Table 9-15 presents all results as L_{eq} and no assessment appears to have been undertaken against $L_{A1,adj,1hr}$ criteria,	Noise generated by Mining Operations This section should emphasise that the impact on human health at the sensitive receivers will be appropriately mitigated to achieve a satisfactory internal noise level for the preservation of health and well-being identified within the Environmental Protection (Noise) Policy 2008. It is recommended that the proponent provides details of any proposed management options to be implemented if it is not possible to reduce noise emissions of sources sufficiently to ensure compliance with the Environmental Protection (Noise) Policy 2008, including the $L_{A1,adj,1hr}$ criterion, at all sensitive receivers.	Vol 2, Chapter 9 Noise and Vibration and Appendices U and AF; Chapter 13 EMP (mine) and Chapter 14 EMP (off site)	A revision to the sleep disturbance assessment is included in the updated Noise and Vibration Assessment Report (SEIS Volume 4, Appendix N). This report also includes new modelling of impacts based on the revised Project Description. Amendments and proposed management options have also been included in the Mine and Offsite Environmental Management Plans (SEIS Volume 4, Appendix Q1 and Q2).
26	QLD Health	Noise and Vibration	Noise and Vibration	Rail Noise Although it is recognised that the *Environmental Protection Act 1994* exempts noise from rail infrastructure (schedule 1, part 1, section 1) it is recommended that the noise criteria specified within the World Health Organisation's Guidelines for Community Noise (available at http://whqlibdoc.who.int/hq/1999/a68672.pdf and the enHealth Council's *The health effects of environmental noise - other than hearing loss* (available at www.nphp.gov.au/enhealth/council/pubs/pdf/noise.pdf be adopted, This identifies a level of 45 dB(A) LA_{Max} as the recommended sleep disturbance criteria, The proponent does not appear to have assessed the impacts of rail noise against sleep awaking criteria. Tables 3-6 and 3-7 within S15.4.9 on the surrounding sensitive receivers, including the accommodation village.	Rail Noise The proponent should ensure that all sensitive receptors affected by rail noise have been appropriately assessed against the relevant sleep disturbance criteria and that adequate mitigation measures are undertaken to ensure the health and well-being of occupants is maintained. The impact from the proposed rail line must also be taken into account and this must include compliance with the $L_{A1,adj,1hr}$ criteria. It is important that the proponent confirms that any proposed noise attenuation measures will mitigate any adverse affect on human health, The proponent should highlight aspects within the Project Commitments (Chapter 10).	Vol 1 Chapter 10 List of Proponent Commitments; Vol 3 Chapter 9 Noise and Vibration; Chapter 13 Draft EMP; Vol 2 Chapter 14 EMP (off site); App U tabels 3.6 and 3.7	A revision to the sleep disturbance assessment is included in the Updated Noise and Vibration Assessment Report (SEIS Volume 4, Appendix N). Amendments have also been include in the Offsite Environmental Management Plan (SEIS Volume 4, Appendix Q2). A revised noise and vibration modelling was not undertaken for the rail line due to limited change in the realignment thus limited change in the outcomes of this assessment.
26	QLD Health	Hazard and Risk	Hazard and Risk	Queensland Health believes that the Health and Safety component of the EIS (Mine Chapter 12 - Hazard and Risk S12.4) needs to provide further details relating to the following aspects; • The impacts the project will have on the regional health services. In particular concerns relating to the increased in risk of road trauma. The identified potential impact of the mine activities is the increased need for emergency first response. An increase in the population within the area may result in an increase in demand for a cross section of health services.	Queensland Health recommends that as required by the Terms of Reference, the proponent; • Assesses the impact the project will have on regional health services and describe any necessary management strategies, including consultation with the appropriate regional Hospital and Health Service district	Vol 2 Chapter 12 Hazard and Risk (Health and Safety Component)	Adani is working closely and will continue to work with QPS and other emergency service providers with regards to road management (traffic movements and emergency response).
26	QLD Health	Hazard and Risk	Public Health and safety	• The proponent has not identified whether any food services will be provided on-site to the workers.	• Identifies how any/all food that is provided on-site will comply with the *Food Act 2006* , administered by Local Government.	Volume 2 Section 12.4	Food provision at the workers accommodation village will be in accordance with the requirements of the Food Act 2006.
26	QLD Health	Hazard and Risk	Public Health and safety	Chapter 12 (Mine Activities), S12.4 (pg 12-63) only stipulated that, "Adani will implement its Health Safety and Environment Policy (refer to Volume 4 Appendix A Adani Environment and Sustainability Policy) which provides the basis for management of employee and public health and Safety." This does not satisfy S6.2.2 of the Terms of Reference, which states that the proponent will: "Assess the cumulative effects on public health values and occupational health and safety impacts on the community and workforce from project operations and emissions. Assess the impact the project will have on regional health services and describe any necessary management strategies, including but not limited to consultation with the appropriate health service district. It was also noted that these aspects were not covered adequately within the corresponding Social Impact Chapter.		Volume 2 Section 12.4	Adani is committed to consulting with regional heath services providers to monitor and address any project impacts on their services, this is outlined in Appendix D1 Sections 8.6, 8.9 and SIMP SEIS Volume 4 Appendix D1 Sections 3.7 and 3.8.
26	QLD Health	Hazard and Risk	Public Health and safety	That the proponent has provided a "mosquito management plan" for the entire site and in particular areas where it is intending to pond significant volumes of water.	• The proponent however has not identified within Chapter 10 (project Wide Commitments) any commitment to carrying out any Mosquito/Biting Midge Management Plan	Vol 1, section 10 Vol 2 Section 12	Adani will develop a Mosquito/Biting Midge Management Plan prior to the commencement of construction.
26	QLD Health	Hazard and Risk	Public Health and safety	An increase risk to the health and well-being of workers and residents in the surrounding area from the transmission of communicable diseases. The risk of the spread of communicable diseases such as (but not limited to) dengue, measles and hepatitis A increases with a fiy-in fly-out (FIFO) workforce which may be sourced intemationally or from other areas within Australia, and be housed in the worker's accommodation village. The proponent has not considered this risk within this Chapter. The proponent has not provided any details regarding any proposed control mechanisms to mitigate the potential spread of communicable diseases within the accommodation camps and nearby areas.	• The proponent integrates within the Health and Safety Management Program, a plan which will safeguard workers and local residents from the spread of communicable diseases (such as dengue, measles and hepatitis A). This plan, although not limited to, must incorporate/highlight any proposed; • vaccination program • monitoring program • response program	Vol 2 Section 12	Medical Facilities will be established at the mine site and Mine Workers Accommodation Village in accordance with relevant legislative framework. Adani will proactively explore health programs that further improve worker's health. This will include a thorough worker health education program. Adani will ensure that appropriate Emergency Response Plans are implemented and aligned with the Adani Corporate Crisis Management Plan which will outline the appropriate response needed for such events. This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.1.1.

27	Greenpeace Australia Pacific	Transport	Road crossings	The impact of the offsite infrastructure proposed to support this mine is barely assessed. This includes the intensity of use of the proposed rail way line, the proposed capacity of which defies logic. The proponent's claim that the Carmichael mine will produce 60Mtpa of coal, with the stated specifications of the rail line, by our calculation, is only achievable if the line operates constantly 365 days of the year with no maintenance. According to our calculations, each wagon will need to be filled in 1.5 minutes and, overall, one wagon filled at the mine every 45 seconds of every day of the year. No thought appears to have been given to the practical ramifications for anyone who lives near or has to cross this proposed rail line.		Vol 3, Section 11.3	Comments are noted.
27	Greenpeace Australia Pacific	Greenhouse Gas Emissions	Greenhouse Gas Emissions	At peak production, we calculate that the coal removed from the Carmichael mine, exported and burnt overseas, will produce 128 million tonnes of carbon dioxide annually. There is no mention of this in the Environmental Impact Statement.		Vol 2, Section 8	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
27	Greenpeace Australia Pacific	Nature Conservation	Survey effort	Throughout the EIS, there is reference made to a range of consequential developments that support the mine, including a workers village, an airport and an "industrial area". Why the proponent has chosen to refer to these developments as "offsite" when some appear to be immediately adjacent to the mine, and all are within a short distance, is not clear. What is clear is that a far lower standard of assessment has been applied to these developments. The field surveys described in the Terrestrial Ecology Report cover the mine site only (consisting of EPC 1690 and EPC 1080), with the majority of survey work taking place in EPC1690. The location and extent of the proposed offsite infrastructure was apparently changed after the surveys for the Terrestrial Ecology Report were undertaken (Terrestrial Ecology Report 1-18). As such, there appear to have been no field surveys of most the areas that are proposed now to host the offsite infrastructure (Terrestrial Ecology Report 1-9).		Volume 4, App N1 - Terrestrial Ecology Report, pages 1-9, 1-18.	Additional survey work has since been carried out within the off-site infrastructure areas and the results of these surveys have been reported in the Off-site Infrastructure Ecology Assessment Report (SEIS Volume 4, Appendix J5). A revised Ecological Assessment Report (SEIS Volume 4, Appendix J1) provides an overall assessment of the mine and offsite infrastructure impacts, bringing together the consideration of these areas.
27	Greenpeace Australia Pacific	Nature Conservation	Survey effort	In general, offsite infrastructure locations have only been subject to desktop assessments. The exception is a one-day rapid site inspection of offsite water infrastructure areas on 27 June 2012 undertaken by Hyder Consulting. This rapid assessment was undertaken to identify any existing environmental values, such as remnant or native regrowth vegetation and significant habitat values. No targeted fauna searches or surveys were undertaken. The Hyder site inspection report is referenced in the EIS but a copy of the report is not provided.		Vol 4, App N1, Appendix B, section 1.3.2	Additional survey work has since been carried out within the off-site infrastructure areas and the results of these surveys are reported in the Off-site Infrastructure Ecology Assessment Report (SEIS Volume 4, Appendix J5). A revised Ecological Assessment Report (SEIS Volume 4, Appendix J1) provides an overall assessment of the mine and offsite infrastructure impacts. As such the Hyder site inspection report is superseded by the new work.
27	Greenpeace Australia Pacific	Nature Conservation	Survey effort	The construction phase for the offsite infrastructure is scheduled to lead to the clearing of 86 ha of remnant vegetation and 3,227 ha of non-remnant vegetation (including 9 ha of high value regrowth vegetation) (Nature Conservation 5-99). It is unclear why the construction phase requires the clearance of this much vegetation when the entire offsite infrastructure is only reported to be taking up 1,847 ha (Project Description 2-7).		Vol 2, Section 5.3.2, Section 2.13, Section 14.	Construction impacts associated with development of the offsite infrastructure have been recalculated based on the revised Project Description (SEIS Volume 4, Appendix B). These impact areas are reported in the Off-site Infrastructure Ecological Assessment Report (SEIS Volume 4, Section J5).
27	Greenpeace Australia Pacific	Nature Conservation	Survey effort	Strangely, the Matters of National Environmental Significance chapter refers to sightings of threatened species at the "offsite infrastructure." The chapter states that "three black-throated finch (southern) and squatter pigeon (southern) sightings were made at water bodies surrounded by non-remnant vegetation, including at one site which was near the proposed location of the mine village" (11-46). This casual mention of the sighting of two threatened species in an area that will be developed for this project but has not been subject to species-specific surveys is symptomatic of the generally lax and unmethodical approach to this Environmental Impact Statement.		Vol 1, Section 11.1.3.2, section 11.5.1.4 (page 11-46)	Additional survey work has since been carried out within the offsite infrastructure areas and the results of these surveys have been reported in the Offsite Infrastructure Ecology Assessment Report (SEIS Volume 4, Appendix J5) and Revised MNES Report (SEIS Volume 4, Appendix H), where appropriate. A revised Ecological Assessment Report (SEIS Volume 4, Appendix J1) provides and overall assessment of the mine and offsite infrastructure impacts.
27	Greenpeace Australia Pacific	Nature Conservation	Offsite infrastructure assessment	It appears from our reading of the EIS that flora surveying was significantly weaker on EPC1080 and that samplings sites were distributed in a patchy manner which leaves significant geographic gaps in the data and may have led to under-reporting of important habitat for Black-throated finch (southern) and a severe lack of data on the impacted Mellaluka springs.		Vol 4, App N1, Sections 1.5.4, 1.5.5, 1.5.6	Mellaluka Springs has since been the subject of additional survey work, reported in the Springs Ecological Assessment Report (SEIS Volume 4, Appendix J3) and additional black-throated finch monitoring locations have been set up and surveyed within the EPC 1080 area, with results reported in the Black-throated Finch Report (SEIS Volume 4, Appendix J2).
27	Greenpeace Australia Pacific	Nature Conservation	Offsite infrastructure assessment	Table 1 compares the survey and sampling effort for flora and fauna in the two EPCs that make up the Carmichael mine site. Specifically, there are two significant areas where surveys appear to have missed – the western extent of the rail project, and the area at the southern end of EPC1080, where Mellaluka Springs is located. *(refer submission for table 1 - shows difference between survey effort on EPC 1690 and EPC 1080)*		Vol 4, App N1, Sections 1.5.4, 1.5.5, 1.5.6	Mellaluka Springs has since been the subject of additional survey work, reported in the Springs Ecological Assessment Report (SEIS Volume 4, Appendix J3). The area of the western extent of the rail project has since been resurveyed as part of the Offsite Infrastructure Ecological Assessment Report (SEIS Volume 4 Appendix J5).
27	Greenpeace Australia Pacific	Nature Conservation	Survey effort	If the project goes ahead, Mellaluka Springs are likely to experience 0.7 to 0.8 m due to mine dewatering (Water Resources 6-113). The EIS states that: "Further assessment of the ecology and hydrogeology of the springs themselves and of the area between the springs and the proposed mining area is required to better understand the potential for impact in this area." This is not acceptable. An area of potentially high ecological value in the area, such as a spring, needs to have been surveyed and considered before the Government is asked to make a decision about the project.		Vol 2, Section 6.4.4.2, page 6-113 to 6-114	Mellaluka Springs has since been the subject of additional survey work, reported in the Springs Ecological Assessment Report (SEIS Volume 4, Appendix J3). This report includes assessment of threatened species that may be present onsite. A revised Ecological Assessment Report (SEIS Volume 4, Appendix J1) provides an overall assessment of the mine and offsite infrastructure impacts.
27	Greenpeace Australia Pacific	Nature Conservation	Fauna	The Nature Conservation Chapter omits discussion of Dunmall's Snake and Brigalow Scaly-foot, which both have habitat within the industrial area (Rail Ecology Report 3-29). We can only speculate that these species were excluded because they were both deemed unlikely to be present by the Terrestrial Ecology Report (Terrestrial Ecology Report 2-13).		Vol 4, App N1 Section 3.2.5, Table 3-3, page 3-13; App AA1	Comment noted

27	Greenpeace Australia Pacific	Matters of National Environmental Significance	General Comment	The chapter dealing with matters of national environmental significance contains much that is not specifically relevant to the matters that will be impacted by this mine, and little that is. In the threatened species section, the impact on most species is not quantified, nor is the scale of the impact accurately contextualised with the species' extent, status and needs. The mitigation and impacts subsections describe very broad actions ("identification of weed infested areas," design waste storage areas to "minimise" leaking, review literature on mine rehabilitation, for example), without relating these to specific matters of national environmental significance, or describing how they will prevent or minimise impact on those matters. Instead, the chapter refers vaguely to benefits for "ecological values" and "regional biodiversity."		Vol 1, Section 11 Vol 4, App J	The MNES report has been revised and additional information collected from the SEIS process has been incorporated. Please refer to SEIS Volume 4, Appendix H.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Offsite infrastructure assessment	The authors of the EIS do not appear to consider that the development of most of the "offsite infrastructure" triggers any matters of national environmental significance. Only the water supply infrastructure is mentioned, the airport, industrial area and workers village are not.		Vol 1, Section 11 Vol 4, App J Vol 2, Section 14	The revised MNES Report (SEIS Volume 4, Appendix H) incorporates information collected as part of the Offsite Infrastructure Ecological Assessment Report (SEIS Volume 4 Appendix J5) that has been recently completed and the revised Mine Ecology Report (SEIS Volume 4 Appendix J1).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	General Comment	The layout of the chapter is confusing and ambiguous and, as with other parts of the EIS, there are sentences in the chapter on matters of national environmental significance that are actually incoherent. This is a significant barrier to anyone understanding the scale of the impact to the various environmental values, and the proponent's efforts to avoid those impacts.		Vol 1, Section 11 Vol 4, App J	The MNES report structure has been revised and additional information collected from the SEIS process has been incorporated. Please refer to SEIS Volume 4, Appendix H.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Offsets	It is stated that "approaches" to offsetting "have been identified" but the proponent cannot expect that approval can be given for the loss of so much known habitat for an endangered species without very strong ameliorative measures in place and justified. This simply has not occurred.		Vol 1, Section 11.9 Vol 4, App J	Adani has provided an updated Offsets Strategy in the SEIS (Volume 4 Appendix F). Offset acquisition will be in accordance with State and Commonwealth policy requirements and will consider land tenure and other legislative requirements also. Avoidance and mitigation measures are presented throughout the EIS and SEIS include ongoing commitments to seek reductions to predicted environmental impacts.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Black-throated finch	The incredible significance of sighting so many individuals of this species on the site is not acknowledged in the EIS, and the specific impacts to this species from the project are dealt with in four short paragraphs comprised mostly of generalisations and unfounded speculation. Unfortunately, the poor quality of the EIS is again evident in sections that deal with the Black-throated finch (southern). It is clear that the EIS has not rigourously studied the potential impact of the mine on this subspecies because the estimates of present habitat, and proposed clearing are not consistent. The EIS is severely deficient in its description and analysis of the impacts of the proposal on this species. For example it is acknowledged that "mining in the southern part of the Study Area is expected to fragment a belt of remnant vegetation that extends from west of the Study Area, through the Study Area (at the Bygana West Nature Refuge) to the east towards the Belyando River." (Matters of National Environmental Significance 5-28). But there is no analysis of the importance of this connection to the species.		Vol 4, App J, Sections 5.1.5.2, Page 5-28, 5.2, page 5-53 App N3	Consultation meetings were held with the Black-throated Finch Recovery Team (3 May 2013) and DSEWPaC (7 June 2013) and a four part monitoring program was developed comprising of (I) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring (observation) on the Mine Area and the first survey was conducted in May 2013. It established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Detailed vegetation and habitat data was collected at the 2 ha sites. Survey methods follow those in EPBC Significant Impact Guidelines. Surveys were conducted over 8 days. A further 208 records of BTF were recorded mainly from 2-ha counts in 12 locations, including 3 records of nesting. The camera traps recorded a further 6 locations and mainly utilising troughs and ephemeral water. The results are presented in Carmichael Coal Mine and Rail SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey Report. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species Management Plan following the principles of adaptive monitoring and management.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Potential habitat mapping	The matters of national environmental significance chapter states that "A total of 9,862 ha of the 21,246 ha of identified black-throated finch (southern) important areas is proposed to be impacted by vegetation clearing over the life of the mine." Yet this estimate of "important areas" for the subspecies does not match the estimated area of important Black-throated finch (southern) habitat provided in the Black-throated finch report. Table 4 of that document estimates 32,070ha of important habitat across the two EPCs. This is a 10,000ha discrepancy, and increases the "important areas" estimated to be present by half. The mistake may have arisen because the Terrestrial Ecology Report uses a Black-throated finch (southern) map that incorrectly maps important areas, mapping this only where the criteria overlaps with "Potential Habitat" (see Terrestrial Ecology Report 3-26).		Vol 1, Section 11.5.1.5, page 11-54 Vol 4, App N3, Table 4	This has been amended Please refer to the Revised MNES Report in SEIS Volume 4, Appendix H.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Potential habitat mapping	This does not conform to the Department of Sustainability Environment Water Population and Communities' specification for identifying Important Areas, which makes no mention of excluding non-Potential Habitat areas from the 5km radii of Important Areas (Significant impact guidelines for the endangered black-throated finch (southern) (Poephila cincta cincta) 2009, 10) This mistake is corrected in the appended Black-throated Finch Report, which displays a map showing important areas as a radius around sightings, as per the SEWPAC guidelines, and states that "revised habitat mapping was undertaken." It also includes all new sightings of the subspecies, which may have further increased the area defined as "important."		Vol 1, Section 11.5.1.5, page 11-54 Vol 4, App N3, Table 4	Please refer to SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey Report.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Potential habitat mapping	Failure by the proponent to correct this mistake in the Matters of National Environmental Significance report, to reproduce the correct maps, and to incorrectly estimate the area of important habitat for this subspecies present in the mine study area is either a deliberate omission, or evidence that the proponent has failed to rigourously assess the impacts of this project to the standard required for robust decision-making. Since the Black-throated Finch Report does not estimate the area of clearing proposed, it is impossible to know if the area of important habitat for this subspecies proposed to be cleared for this mine is greater than the stated 9,862 hectares, though we suspect this is the case. Indeed, is it possible that it is twice as much.		Vol 1, Section 11.5.1.5, page 11-54 Vol 4, App N3, Table 4	The revised MNES Chapter will include information collected as part of the BTF studies that are currently underway (BTF Report - SEIS Volume 4 Appendix J2) and the revised Mine Ecology Report (SEIS Volume 4 Appendix J1).

27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Black-throated finch	The three paragraphs that comprise the entirety of the assessment of cumulative impacts on the three key threatened fauna species, Black-throated finch (southern), Squatter pigeon and Koala are not an adequate assessment, nor do they fulfil the terms of reference. There is no quantification of the Black-throated finch (southern) and Squatter pigeon habitat loss for the four mines discussed, nor the impacts on the Koala expected at Kevin's Corner and the South Galilee Project.		Vol 4, App J, Section 7.3.3	The revised MNES Chapter will include information collected as part of the BTF studies (BTF Report SEIS Volume 4 Appendix J2) that are currently underway, GAB wetlands from the surveys at Doongmabulla springs (Springs Ecological Assessment Report SEIS Volume 4 Appendix J3), Waxy Cabbage Palm survey (WCP Assessment Report SEIS Volume 4 Appendix J4), Offsite Infrastructure Ecological Assessment Report (SEIS Volume 4 Appendix J5), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater and surface water modelling (SEIS Volume 4 Appendix K5 of the SEIS). This information will be used to provide an assessment of the cumulative impacts on MNES.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Black-throated finch	The EIS does not directly acknowledge that the black-throated finch habitat proposed to be cleared may be habitat "critical to the survival of the species." It is stated that works for the mine may "Adversely affect habitat critical to the survival of the black-throated finch," (Matters of National Environmental Significance 5-49, our emphasis) but this equivocal statement is virtually meaningless without substantiation of what is mean by "adversely affect" and quantification of how much critical habitat is captured by this. The lack of clarity may be a result of the proponent not having access to a document prepared by SEWPAC that states that other woodland in the region would be characterised this way if the subspecies were confirmed to be present, which it has at this site.		Vol 4, App J, Section 5.1.6.2, page 5-49	The revised MNES Chapter will include information collected as part of the BTF studies (BTF Report SEIS Volume 4 Appendix J2) that are currently underway and the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1). Adani commits to developing a detailed Black throated finch management plan which will present all management and mitigation measures for minimising potential impact on the Black throated finch. Refer to SEIS Volume 4, Appendix G Section 2.1.6.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Black-throated finch	The proponent notes that SEWPAC identifies "any habitat within 5 km of a post-1995 sighting as an 'important area' for the subspecies." (Nature Conservation 5-68) and that by this definition, there are (at least) 21,246 ha of important habitat for the Black-throated finch (southern), but fails to register the significance of having so many sightings in one area, and so much contiguous important habitat. It also notes that "it is considered likely that the black-throated finch (southern) is breeding at the Study Area" (Matters of National Environmental Significance 4-27), that the individuals they sighted are likely to comprise a population, and that the mine may "result in a long-term decrease in the size of the black-throated finch (southern) population in the landscape in which the Project Area occurs" (Terrestrial Ecology Report 6-56; Matters of National Environmental Significance 5-49) and yet it fails to register the importance of this population within the regional and national context of the subspecies' conservation status.		Vol 2, Section 5.2.4.3, page 5-66 Vol 4, App J, Section 4.2.2.1, page 4-27 Vol 4, App N1, section 6.3.4.2, page 6-56 Vol 4, App J, Section 5.1.6.2 , page 5-49	The revised MNES Chapter will include information collected as part of the BTF studies (BTF Report SEIS Volume 4 Appendix J2) that are currently underway and the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Black-throated finch	The ambiguity and lack of clear and accurate written composition of the assessment means we cannot be confident that the proponent understands that the nearly 10,000ha (or more) of important habitat they propose to clear is likely to be critical to the survival of the subspecies.		Vol 2, Section 5.2.4.3, page 5-66 Vol 4, App J, Section 4.2.2.1, page 4-27 Vol 4, App N1, section 6.3.4.2, page 6-56 Vol 4, App J, Section 5.1.6.2 , page 5-49	The revised MNES Chapter will include information collected as part of the BTF studies (BTF Report SEIS Volume 4 Appendix J2) that are currently underway and the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Black-throated finch	Water resources are identified by the EIS as a critical habitat feature for this species (Matters of National Environmental Significance 4-16) and the EIS identifies stock watering troughs and dams as key features of habitats where finches were recorded (Matters of National Environmental Significance 4-18). And yet, loss of surface water is not identified as a potential impact on this species, or others, in the Matters of National Environmental Significance chapter (5-8 and 5-9). The loss of a farm dam is mentioned in the narrative, but no substantiation is offered for the assertion that this will not have an impact on the population. There is brief mention of this possibility, in an entirely speculative aside: "The provision of surface water in the eastern part of the Study Area (water management dams) may provide additional localised access to drinking water for the subspecies (or at least compensate for the loss of surface water resources in nearby parts of the Study Area)" (Matters of National Environmental Significance 5-30).		Vol 4, App J, Section 4.2.2.1, page 4-16, 4-18 Vol 4, App J, Section 5.1.4.1, page 5-8, 5-9, Vol 4, App J, Section 5.1.5.2, page 5-30	The revised MNES Chapter will include information collected as part of the BTF studies (BTF Report SEIS Volume 4 Appendix J2) that are currently underway and the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Black-throated finch	In a separate section, it is noted that "Draw down of water levels during periods of flood harvesting to the extent that dams are drained on Obungeena Creek and North Creek may also result in the mortality of resident aquatic species. Beyond this dams may also naturally dry during periods of drought" (Matters of National Environmental Significance 5-33 and 34). But this aspect of the mine's impact is not discussed in relation to the Black-throated finch (southern).		Vol 4, App J, Section 5.1.5.2, page 5-33	The revised MNES Chapter will include information collected as part of the BTF studies (BTF Report SEIS Volume 4 Appendix J2) that are currently underway and the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Black-throated finch	On these grounds, particularly on the loss of a large area of critical habitat for a breeding population of a significant size, it is clear that the project would have an unacceptable impact on this subspecies. The Black-throated finch (southern) significant impact guidelines list the chief threats to the subspecies, and this project is contributing to the first three that are listed there: • clearing and fragmentation of nesting sites • clearing and fragmentation of foraging habitat (grasslands and grassy woodlands) • reduction in the availability (location and duration) of water		Volume 1, Section 11.4 and 11.5 Volume 4, Appendix N3	Opinion noted.

27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Black-throated finch	The EIS asserts that, “Research works will contribute to the maintenance of this subspecies within this bioregion and therefore, in general, to the recovery of the subspecies” (Matters of National Environmental Significance ix) citing the Recovery Plan for the species. Nowhere in the Recovery Plan does it state that undertaking research can ameliorate the loss of nearly 10,000ha of known important habitat for an important population of the subspecies. We believe that the impact to this species proposed for this mine are unacceptable.		Vol 4, App J, Executive Summary, page ix	Opinion noted.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Squatter Pigeon	The proponent proposes that the project will require clearing over the life of mine operations of 12,391ha of habitat for this species. Yet, there is deficiency in the assessment of the impact this scale of habitat loss, particularly combined with the habitat loss for this species in the railway, and the cumulative impact with other projects nearby.		Vol 4, app J, Section 5.1.5.2, page 5-30	The revised MNES Chapter will include information on the squatter pigeon from the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Squatter Pigeon	For both the Squatter pigeon and the Black-throated finch (southern), the availability of water is acknowledged to be a crucial feature of their habitat requirements. One of the pictures of Squatter pigeons observed on the mine site shows an individual perched on a cattle trough. An identical three sentences about the availability of water from new dams compensating for the loss of water from clearing appears for this species, as for the Black-throated finch (southern).		Vol 4, App J, Section 5.1.5.2, page 5-31	The revised MNES Chapter will include information on the squatter pigeon from the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Squatter Pigeon	The three paragraphs that comprise the entirety of the assessment of cumulative impacts on the three key threatened fauna species, Black-throated finch (southern), Squatter pigeon and Koala are not an adequate assessment, nor do they fulfil the terms of reference. There is no quantification of the Black-throated finch (southern) and Squatter Pigeon habitat loss for the four mines discussed, and neither is there discussion of the impacts on the Koala expected at Kevin’s Corner and the South Galilee Project.		Vol 4, App J, Section 7.3.3	The revised MNES Chapter will include information collected as part of the BTF studies (BTF Report SEIS Volume 4 Appendix J2) that are currently underway, GAB wetlands from the surveys at Doongmabulla springs (Springs Ecological Assessment Report SEIS Volume 4 Appendix J3), Waxy Cabbage Palm survey (WCP Assessment Report SEIS Volume 4 Appendix J4), Offsite Infrastructure Ecological Assessment Report (SEIS Volume 4 Appendix J5), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater and surface water modelling (Volume 4 Appendix K5 of the SEIS). This information will be used to provide an assessment of the cumulative impacts on MNES.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Waxy Cabbage Palm	Surveys undertaken for the EIS detected the endemic waxy cabbage palm (Livistona lanuginosa) in the channel of the Carmichael River. The Terrestrial Ecology Report says of this species that “The entire species is believed to be represented by only seven discrete populations, with the Carmichael River population located at the most southern extent of the species’ distribution (SEWPAC, 2012a).” (Terrestrial Ecology Report 3-9). No mention is made of the potential impact of the hydrological disturbance caused by the levies on the plants, or of the difference in flow regime if the dry season flow is reduced from the Doongmabulla Springs into the Carmichael River. The EIS contradicts itself about the degree to which this species is dependent on groundwater, but evidence from the Doongmabulla Springs suggests it may be. No assessment is made of individuals of this species off the mining site that may be impacted by groundwater drawdown.		Vol 4, App N1, Section 3.2.4.1 , page 3-9	The revised MNES Report includes information collected as part of the surveys undertaken for the Doongmabulla and Mellaluka springs (Springs Report SEIS Volume 4 Appendix J3), Waxy Cabbage Palm survey (WCP Assessment Report SEIS Volume 4 Appendix J4), Offsite Infrastructure Ecological Assessment Report (SEIS Volume 4 Appendix J5), the revised Mine Ecology Report (SEIS Volume 4 Appendix J1) and the revised groundwater and surface water modelling (Volume 4 Appendices K1 and K5 of the SEIS).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Waxy Cabbage Palm	There is some ambiguity in the description of the intended works for the riparian zone around the Carmichael River. The statement that “The initial mine design identified a 500m corridor to be retained either side of the centre line of the Carmichael River to protect it and the riparian zone from mining operations.” (Project Description 6-98, our emphasis) indicates that subsequent to this, the design may have changed, but does not describe how. There is no real assessment of the impact of the mine and its consequential impacts on this species, nor is there clear indication of the proximity of clearing and building works for the river crossing in relation to the ten individuals of this species found on site. Specifically, the proponent should be required to investigate the effect of the proposed levies around the Carmichael River, designed to prevent the pits flooding during flood events. Will this result in flooding of the ten individuals present, and what effects will this have on them and their ability to reproduce?		Vol 2, Section 6.4.2.1	The revised MNES Chapter includes an assessment of potential impacts to the waxy cabbage palm population (see also Waxy Cabbage Palm Population Survey, SEIS Volume 4 Appendix J4). This assessment is based on the findings of the hydraulic assessment (SEIS Volume 4 Appendix K5) and groundwater assessment (SEIS Volume 4 Appendix K5). Given the waxy cabbage palms reported on in the EIS live in the Carmichael River channel, they are already experiencing periodic flooding. In addition, this species is specifically adapted to use flooding events to spread seed and therefore colonise new areas, and in fact relies on these events (as reported in the EIS). Therefore, while the levies may have an impact on the behaviour of flood waters, flooding itself is not an adverse impact but actually a requirement for successful recruitment.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Waxy Cabbage Palm	At the other extreme, the dramatic drawn down of groundwater predicted in the mine’s 60th year of operation is expected to significantly impact on flows in the Carmichael River. The EIS states that “At its greatest extent of operations and development, after approximately 60 years (of a ninety year mine life), drawdowns of up to between 30 to 60 m have been predicted for the groundwater table in the vicinity of the Carmichael River” (Matters of National Environmental Significance 5-34). It notes that this species is groundwater dependent.		Vol 4, App J, Seciton 5.1.5.2, page 5-34 Vol 4, App N1, Section 6.5.1	The groundwater dependency of this species has been acknowledged and reported on within the Waxy Cabbage Palm Assessment Report (SEIS Volume 4, Appendix J4).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Waxy Cabbage Palm	And yet , there is no discussion, analysis or assessment of the impact this dramatic change in the groundwater of the surrounding area will have on the Livistona lanuginosa present on the site, or on any other individuals in the surrounding area, for which a search has presumably not been undertaken. It is noted that there are 25 individuals at Doongmabulla Springs, but the impact of the altered flow regime and reduced availability of groundwater on the species is mentioned without being investigated. In the Terrestrial Ecology Report, it is stated that the Waxy cabbage palm is particularly vulnerable to this draw down, and that populations of it may be lost, and yet there is no acknowledgement that the mine will have a significant impact on this species.		Vol 4, App J, Seciton 5.1.5.2, page 5-34 Vol 4, App N1, Section 6.5.1 App N2	Impacts on the waxy cabbage palm are addressed in Volume 2 Chapter 5 of the SEIS. A population study of the waxy cabbage palm populations at Doongmabulla Springs and the Carmichael River has been undertaken and is presented in Volume 4 Appendix J4 of the SEIS. Adani will develop a Draft Groundwater Dependant Ecosystem (GDE) Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G, Section 2.3.4.

27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Koala	As for other nationally threatened species, the assessment of the impacts of this project on the Koala is incomplete and, in places, unsubstantiated. The discussion on the impact of the mine's groundwater extraction on groundwater dependent ecosystems in the area, for example, discusses the significant extraction proposed by the proponent and states that "A worst case scenario would involve localised dieback of riparian vegetation communities such as river red gums and paperbarks" (Matters of National Environmental Significance 5-36). The impact of this on the Koala is not discussed.		Vol 4, App J, Section 5.1.5.2, page 5-31, 5-36	The revised MNES Chapter includes further information on Koalas from the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (SEIS Volume 4 Appendix K5).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Koala	The Terrestrial Ecology Report contains clearer statements that acknowledge the impact of the draw down on groundwater dependent riparian communities, including River Red Gum, predicting: "Progressive mortality of characterising riparian species in the middle to latter parts of the operational life of the mine (after 60 years) beginning with less deeply rooted individuals (and species), and continuing to more persistent species such as river red-gums in the latter part of the mine life" (6-68). And yet, the impact of this on any nationally threatened species that may be dependent on this community, including the Koala, is not discussed.		Vol 4, App N1, Section, 6.5.1, page 6-68	The revised MNES Chapter will includes further information on Koalas from the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (SEIS Volume 4 Appendix K5).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Koala	It is stated that, "The Bygana West Nature Refuge in the southern part of the Project Area was proclaimed, amongst other reasons, as it contains suitable koala habitat" (Matters of National Environmental Significance 4-31). But the degree to which the koala habitat in this Nature Refuge is groundwater dependent is not discussed, nor is the regional importance of the habitat corridor that is proposed to be broken by clearing for this mine.		Vol 4, App J, Section 4.2.2.1, page 4-31	The revised MNES Chapter will include information on Koalas from the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (SEIS Volume 4 Appendix K5).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Koala	Further surveys and analysis is proposed, and a "Species Specific Management Plan." It is inappropriate for this to occur after the publication of the EIS, and the federal government should not have allowed this document to be publicly exhibited without adequate surveys and analysis being conducted. The government will not be in a position to make a determination on this project without this information being provided beforehand, and will expose itself legally and erode public confidence in the environmental assessment process if proper, comprehensive, accurate and detailed assessment is not conducted for this and other species and communities for which it has statutory responsibility.		Vol 4, App J, Section 5.1.5.4, page 5-45	Please refer to SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey Report for findings of the additional work undertaken as part of the SEIS.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Threatened Ecological Communities	The Recovery Plan for the ecological community known as 'The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin' (hereafter, GAB discharge spring wetlands), which listed as Endangered under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) lists aquifer draw down as the first threat to this community. The impact of draw down associated with this project is not satisfactorily dealt with, and we believe that the impact on the Doongmabulla Springs particularly, and the threatened and endemic species that live there, is poorly described in the EIS and may well be understated.		Vol 4, Appendix J, page 5-35; App N2	The revised MNES Chapter includes information on GAB wetlands from two surveys at Doongmabulla springs (reported on separately in the Springs Ecological Assessment Report SEIS Volume 4 Appendix J3), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (Volume 4 Appendix K5 of the SEIS). Impacts on Doongmabulla Springs and the flora and fauna that live there have been specifically addressed in revised EIS in Volume 2 Chapter 5.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Threatened Ecological Communities	We cannot agree with the unsubstantiated assertion that the impact on this important wetland, and its dependent species, of groundwater draw down associated with this project in the short to medium term "is deemed to be insignificant" (Matters of National Environmental Significance 5-35). The long term impact is acknowledged to be likely to be much worse, considering the extensive groundwater drawdown predicted for the 60th year of the mine, yet the EIS does not assess this impact, and states instead that "In the longer term, while the predicted drawdowns are less than that currently regarded as having a potential adverse impact on GAB springs, management measures may be derived during the course of the monitoring program to enable any potential threat to ameliorated during the latter operational phases of the mine (i.e. beyond 60 years)." (Matters of National Environmental Significance 5-35)		Vol 4, Appendix J, page 5-35; App N2	The revised MNES Chapter includes information on GAB wetlands from two surveys at Doongmabulla springs (reported on separately in the Springs Ecological Assessment Report SEIS Volume 4 Appendix J3), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (Volume 4 Appendix K5 of the SEIS). Impacts on Doongmabulla Springs have been specifically addressed in revised EIS in Volume 2 Chapter 5. Adani will develop a Draft Groundwater Dependant Ecosystem (GDE) Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G, Section 2.3.4.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Threatened Ecological Communities	Information provided about the degree of draw down expected at and around Doongmabulla Springs is contradictory. It is repeatedly stated that the draw down at the Springs, at the peak of intensity, will be around 0.2m, and yet, elsewhere in the EIS, it I is stated that dewatering for safety reasons will result in "declining groundwater levels, drawn down by more than one metre up to around 10 km from the Project (Mine) site during the operational phase." (Water Resources 6-108). Doongmabulla Mound Springs Nature Refuge is less than 10km from the Project Area. As we have stated for other groundwater-dependent threatened species, we do not have confidence that this EIS has accurately or adequately described and understood the impact this draw down is likely to have. The EIS is riddled assumptions, deferrals and conclusion-leaping that cannot provide the basis for a sound decision on the impact of this mine on this community.		Vol 2, Section 6.4.4.2, Page 6-112; Vol 4 App J, App N2	The revised MNES Chapter includes information on GAB wetlands from two surveys at Doongmabulla springs (reported on separately in the Springs Ecological Assessment Report SEIS Volume 4 Appendix J3), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (Volume 4 Appendix K5 of the SEIS). Impacts on Doongmabulla Springs have been specifically addressed in revised EIS in Volume 2 Chapter 5.

27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Threatened Ecological Communities	The Water Resources chapter states that: Groundwater modelling results suggest that groundwater discharges to local water courses, predominantly the Carmichael River, will be reduced by up to 1,000 m3/d or 7 per cent of pre-development discharge during the operational phase. Where groundwater discharge is reduced by 7 per cent as predicted then this may have some impact on the duration of zero flow and/or low flow periods in the Carmichael River and also possibly the Belyando River downstream. Ongoing monitoring and measurement of flows in the Carmichael River and of discharges from the Doongmabulla Springs is required to quantify the magnitude of these impacts. The Carmichael River also receives a proportion of its water from Doongmabulla Springs; hence any reduction in the rate of flow from the springs as a result of the minor predicted impacts on groundwater levels at two of the springs may also contribute to a reduction of flow in the river. (6-114). It is not reasonable to expect a sound decision to be made on the basis of this lack of knowledge.		Vol 2, Section 6.4.4.2, Page 6-114	Adani has undertaken a number of additional investigations to inform potential impacts on the Doongmabulla and Mellaluka Springs. The additional information is available in the Springs Ecology Report, SEIS Volume 4 Appendix J3, and the revised groundwater and water balance modelling in Appendices K1, K2 and K5 of the SEIS).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Threatened Ecological Communities	The EIS states that "further assessment will be undertaken to further refine an understanding of the status of each of the registered bores that may be significantly impacted by drawdown" (Water Resources 6-116). It is not appropriate for approval to be given to this mine without the assessment being complete and contravenes the requirements of the Terms of Reference, which required analysis of "pumping parameters, draw down and recharge at normal pumping rates and seasonal variations (if records exist) of groundwater levels."		Vol 2, Section 6.4.4.2, Page 6-116	The revised MNES Chapter includes information on GAB wetlands from the surveys at Doongmabulla springs (Springs Ecological Assessment Report SEIS Volume 4 Appendix J3), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (Volume 4 Appendix K5).
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Threatened Ecological Communities	Given the significance of nearby Great Artesian Basin springs, it is untenable that this project should be given approval to go ahead without additional work being undertaken. We strongly suspect that once it is undertaken, it will become clear that the project would have unacceptable impacts on the Doongmabulla Springs.		Vol 4, Appendix J, page 5-35; App N2	The revised MNES Chapter includes information on GAB wetlands from two surveys at Doongmabulla springs (reported on separately in the Springs Ecological Assessment Report SEIS Volume 4 Appendix J3), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (Volume 4 Appendix K5 of the SEIS). Impacts on Doongmabulla Springs and the flora and fauna that live there have been specifically addressed in revised EIS in Volume 2 Chapter 5.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Threatened Ecological Communities	One of the most glaring omissions of the EIS is the failure to assess the potential impact of the mine on the threatened and endemic flora and fauna species of the Doongmabulla Springs. Of particular concern are the threatened plant species Eryngium fontanum (Blue devil), Eriocaulon carsonii (Salt pipewort) and the Waxy cabbage palm. It is acknowledged that these species are present, and that they are groundwater dependent, but the impact on these species of drawdown and altered hydrology generally in the area surrounding the mine is not assessed at all. The EIS notes that the springs support "six flora species of conservation significance, including two species known to be endemic to the Doongmabulla spring (the herb Eryngium fontanum and the grass Sporobolus pamelae)" (Matters of National Environmental Significance 4-42). There is mention in the appended Doongmabulla Springs Report of the endemic mollusc that inhabits the springs, Gabbia rotunda, but this creature does not rate a mention in the Terrestrial Ecology Report, the Aquatic Ecology Report or the chapter on matters of national environmental significance.		Vol 4, Appendix J, page 4-42; App N2	The revised MNES Chapter includes information on GAB wetlands from two surveys at Doongmabulla springs (reported on separately in the Springs Ecological Assessment Report SEIS Volume 4 Appendix J3), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (SEIS Volume 4 Appendix K5 of the SEIS). Impacts on Doongmabulla Springs and the flora and fauna that live there have been specifically addressed in revised EIS in Volume 2 Chapter 5. Adani will develop a Draft Groundwater Dependant Ecosystem (GDE) Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G, Section 2.3.4.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Threatened Ecological Communities	The EIS proposes that the proponent will undertake, prior to any dewatering, "An ecological survey of the spring complex to establish its 'health' and to establish any seasonal variations. The survey would include measurement or estimation of discharge flows, assessment of the water quality and assessment of the ecology (for example extent, health and species present)" (Water Resources 6-116). This assessment should have been completed prior to the EIS being exhibited for public comment. The Queensland Government erred in exhibiting the document without this full assessment having been conducted.		Vol 2, Section 6.4.4.2, Page 6-116; App N2	The revised MNES Chapter includes information on GAB wetlands from two surveys at Doongmabulla springs (reported on separately in the Springs Ecological Assessment Report SEIS Volume 4 Appendix J3), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (SEIS Volume 4 Appendix K5 of the SEIS). Impacts on Doongmabulla Springs and the flora and fauna that live there have been specifically addressed in revised EIS in Volume 2 Chapter 5.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Threatened Ecological Communities	Most alarmingly, the impact of the most intensive phase of the mine, when draw down in some surrounding areas is estimated to reach tens of metres, is not described, assessed and analysed. It is stated that this phase of the mine will lead to "Loss of a small area of vegetation, including species of conservation significance, along the outer boundary of the [Doongmabulla Springs] wetland as the volume of flow from the spring declines" (Matters of National Environmental Significance 5-35) but this is the extent of the discussion of this significant impact on a federally threatened ecological community, which harbours two federally threatened endemic species.		Vol 4, Appendix J, page 5-35; App N2	The revised MNES Chapter includes information on GAB wetlands from two surveys at Doongmabulla springs (reported on separately in the Springs Ecological Assessment Report SEIS Volume 4 Appendix J3), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (Volume 4 Appendix K5 of the SEIS). Impacts on Doongmabulla Springs and the flora and fauna that live there have been specifically addressed in revised EIS in Volume 2 Chapter 5. Adani will develop a Draft Groundwater Dependant Ecosystem (GDE) Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G, Section 2.3.4.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Threatened Flora	Eryngium fontanum The EIS does not include an assessment of the impact of the draw down associated with the mine on the nationally endangered Eryngium fontanum. Moses Springs hosts one of only two known populations of E. fontanum. It also hosts an important population of Eriocaulon carsonii. It is expressly stated that the EIS does not consider the impacts of the project on species "Whose distribution does not encompass the Study Area" and describes this approach as "conservative" (Matters of National Environmental Significance 5-46). This is despite acknowledgement that the impacts of the project, particularly on groundwater dependent ecosystems, extend well beyond the project area, both upstream and downstream. The EIS, in this respect, cannot be said to have fulfilled its terms of reference and should not have been publicly exhibited.		Vol 4, Appendix J, page 5-46; App N2	The revised MNES Chapter includes information on GAB wetlands from two surveys at Doongmabulla springs (reported on separately in the Springs Ecological Assessment Report SEIS Volume 4 Appendix J3), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (SEIS Volume 4 Appendix K5 of the SEIS). Impacts on Doongmabulla Springs and the flora and fauna that live there, including Eryngium fontanum and Eriocaulon carsonii, have been specifically addressed in revised EIS in Volume 2 Chapter 5. Adani will develop a Draft Groundwater Dependant Ecosystem (GDE) Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G, Section 2.3.4.

27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Threatened Flora	Eryngium fontanum The importance of Doongmabulla Springs for this species is not accurately represented. The EIS states that, “Essential habitat for this species occurs approximately 10 km south-west of the Project Area in Doongmabulla Mound Springs Nature Refuge.” Yet, the Recovery Plan for GAB discharge spring wetlands describes Doongmabulla Springs as “Habitat critical to the survival of the species” (our emphasis). So, there are two nationally threatened species for which this mine will remove or damage habitat “critical to their survival,” and one has no assessment undertaken at all.		Vol 4, Appendix J, page 5-34, App N2	The revised MNES Chapter includes information on GAB wetlands from two surveys at Doongmabulla springs (reported on separately in the Springs Ecological Assessment Report SEIS Volume 4 Appendix J3). This report discusses the importance of Doongmabulla Springs wetland for the endemic species is contains. In addition, the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and revised groundwater modelling (Volume 4 Appendix K5 of the SEIS) contribute to a revised impact assessment on Doongmabulla Springs and Eryngium fontanum (in Volume 2 Chapter 5). Adani will develop a Draft Groundwater Dependant Ecosystem (GDE) Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G, Section 2.3.4.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Threatened Flora	Eryngium fontanum The critical habitat for E. fontanum is described in the Recovery Plan as habitat “based on permanent spring-fed wetlands with a groundwater source from the GAB within a 5km radius of Doongmabulla and Edgbaston/Myross Springs” (our emphasis). Since the EIS states that the springs are only 8km from the study area (Water Resources 6-88) then there is habitat critical to the survival of a federally engendered plant species just 3km from the study area. This is well within the intense zone for groundwater draw down.		Vol 2, Section 6.2.6.1, Page 6-88; App N2	The revised MNES Chapter includes information on GAB wetlands from two surveys at Doongmabulla springs (reported on separately in the Springs Ecological Assessment Report SEIS Volume 4 Appendix J3), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater modelling (Volume 4 Appendix K5 of the SEIS). Impacts on Doongmabulla Springs and the flora and fauna that live there, including Eryngium fontanum, have been specifically addressed in revised EIS in Volume 2 Chapter 5. Adani will develop a Draft Groundwater Dependant Ecosystem (GDE) Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G, Section 2.3.4.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Great Barrier Reef Marine Park	The Terms of Reference required the EIS to include “a detailed discussion on the potential impacts of the proposal on the Great Barrier Reef Marine Park (the Marine Park).” This includes assessment of the potential for “Persistent organic chemicals, heavy metals, or other potentially harmful chemicals accumulating in the marine environment.” These potential pollutants, known to be associated with coal and mining operations, are not mentioned in the chapter dealing with matters of national environmental significance.		Vol 1, Section 11.2	The revised MNES Chapter will include further information on water quality impacts on the GBR. The eastern extent of the Study Area is located approximately 125 km due west and 300 km upstream of the GBRMP. The Study Area falls within the Burdekin River Basin that drains to the Great Barrier Reef (GBR) via the Burdekin River into Upstart Bay, south of Ayr. The Study Area includes a number of streams that flow into the Carmichael River, then the Belyando River which joins the Suttor River upstream of the Burdekin Falls Dam and Lake Dalrymple. An additional three weirs (Gorge, Blue Valley and Clare Weirs) create further hydrological barriers between the Burdekin Falls Dam and the Burdekin River that flows into the GBR. The distance of the study area from the GBR and barriers (dam etc.) would greatly reduce any impacts from the Study Area from having an influence, directly or indirectly, on the protected values of the GBRWHA or Marine Park.
27	Greenpeace Australia Pacific	Matters of National Environmental Significance	Great Barrier Reef Marine Park	The EIS claims that water from the mine will be “be subject to significant scrubbing prior to reaching the coast” (Matters of National Environmental Significance 2-4). It is not clear to us what is meant by this statement. Is the proponent claiming that any pollutants released into the river as a result of this project will be deposited downstream before reaching the Great Barrier Reef? If so, some substantiation for this assertion should be provided, as should assessment of where these pollutants are likely to accumulate, and the effect this would have on the local environment.		Vol 4, App J, page 2-4	The revised MNES Chapter will include further information on water quality impacts on the GBR (see response to 27AS) and clarify the existing text in the MNES chapter.
27	Greenpeace Australia Pacific	Water Resources	Water supply	As in other sections of the EIS, there are apparent contradictions in the statements made about the water impacts of this project. The scale of water use and impact of this project needs to be thoroughly understood before the community and Governments can be expected to make informed decisions about whether or not it is in the public interest for this project to go ahead. The proponent proposes the following major water extraction works: - Construction of flood harvesting stations at the Belyando River and North Creek - Construction of in-stream storage extractions at North Creek and Obungeena Creek - Trenching and construction of pipelines, including waterway crossings - Construction of seventeen borehole pumps to a depth of approximately 120m in the Highland sub-artesian declared area		Vol 2, Section 2.12.3 page 2-89 Vol 2, section 6.4 and 6.5	The updated Project Description (SEIS Volume 4 Appendix B) and Mine Water Balance (SEIS Volume 4 Appendix K2) provide an updated on project water requirements and sources for input water.
27	Greenpeace Australia Pacific	Water Resources	Groundwater	The impact of the mine on local and regional water will be dramatic. It is stated that “At its greatest extent of operations and development, after approximately 60 years (of a ninety year mine life), drawdowns of up to between 30 to 60 m have been predicted for the groundwater table in the vicinity of the Carmichael River. This results in a decrease (on average) in river baseflow of 7 per cent (approximately 1,000 m3/day)” (Matters of National Environmental Significance 5-34).		Vol 4, App J, 5-34	Opinion noted.
27	Greenpeace Australia Pacific	Water Resources	Groundwater	The Terms of Reference required that the EIS include “a comprehensive hydrogeological description covering: the coal seams and surrounding aquifers, both artesian and sub-artesian (including the Great Artesian Basin); inter-aquifer connectivity; flow of water; recharge and discharge mechanisms; and hydrogeological processes at work.” In our view, the EIS does not display “a thorough understanding of the existing environment” when it comes to water resources (Water Resources 6-98), particularly groundwater. For example, the EIS admits that “limited data are currently available on the geology and hydrogeology of the area to the south of the Carmichael River and that little is known about the status or source of these springs.” (Water Resources 6-114)		Vol 2, Section 6.4.2.1, Page 6-98 Vol 2, Section 6.4.4.2, Page 6-114	The Addendum to the Mine Hydrogeology Report (SEIS Volume 4, Appendix K6) provides more detailed information on inter-aquifer connectivity; flow of water; recharge and discharge mechanisms; and hydrogeological processes. Additional groundwater monitoring has been installed at ten sites in the area to the south of the Carmichael River during 2013. Details on the monitoring network reported in SEIS Volume 4 Appendix K1 Revised Mine Hydrogeology Report have been updated to reflect the additional locations. Additionally, a longer term monitoring program is being developed in accordance with project commitments to provide an in-depth understanding of the baseline characteristics of these resources and to develop groundwater contaminant trigger levels and limits (refer to SEIS Volume 4 Appendix K1 Revised Mine Hydrogeology Report and Appendix C6 Draft Model Conditions).
27	Greenpeace Australia Pacific	Water Resources	Water supply	Table 1 displays an estimate of overall water demand for the mine throughout it lifetime. (Refer original submission for contents of table 1) The EIS states that this water is to be sourced from - Flood harvesting from the Belyando River - In-steam storages on North Creek and Obungeena Creek - Groundwater bores in the vicinity of the off-site infrastructure area - Potential overland flow harvesting through capture in stormwater systems (Appendix P2 Preliminary Water Balance 2-89)		Vol 2, Section 2.12.3 page 2-89 Volume 4, Appendix P2 - Preliminary Water Balance	Insufficient information to support detailed response. Note that in-stream storages on North Creek and Obungeena Creek have been removed from the Project Description. The overall water balance for the Project has been updated with revised water demand and is included as SEIS Appendix K2 .

27	Greenpeace Australia Pacific	Water Resources	Water supply	The proponent is not certain, however, how much water will be required, stating that “Preliminary water balance results indicate that raw water supply requirements may be as low as 4 GL/annum however, further design and modelling is required to confirm this and water supply requirements may be as high as 10 GL/annum.” (Appendix P2 Preliminary Water Balance 2-89). However, the EIS also states that “During operation, Project (Mine) offsite water supply infrastructure will extract up to 20 GL of flood water, 2 GL of in-stream storage water and up to 2.5 GL of ground water per annum.” (Water Resources 6-120) This appears to be at odds with the estimate that the mine may use 10GL of water per year.		Vol 2, Section 2.12.3 page 2-89 Vol 2, Section 6.5, Page 6-120	The updated Project Description (SEIS Volume 4 Appendix B) and Mine Water Balance (SEIS Volume 4 Appendix K2) provide an updated on project water requirements and sources for input water. Currently the maximum annual average extraction of water from the Belyando River has been set at 10GL per year.
27	Greenpeace Australia Pacific	Water Resources	Water supply	The water allocations in the Belyando/Suttor catchment are summarised in the water resources chapter as: - Urban: 140 Ml per annum, - Urban/Industrial: 610 Ml per annum; - Stock/Domestic: 710 Ml per annum - Irrigation 64,000 Ml per annum. The 10GL per year of water that the proponent may use for this project then, would be around 15% of the total current use of water resources in the catchment. The proposed extraction of groundwater for use by the proponent would impact on flows in the Belyando River. The proponent proposes to place bores within 3km of that river, which it is admitted would result in “localised reductions in baseflows to the Belyando River system.” (5-35). This flow reduction is not quantified, and the extent of the area affected is not estimated or discussed. As with other parts of the EIS, there are contradictory statements made about the degree of water use. The 24.5GL of water that may be extracted if alternative figures in the EIS are to be believed indicates that perhaps the level of water use from this project may in fact be as much as 30% of the volume of water currently allocated in the entire Belyando/Suttor catchment.		Vol 2, Section 6.7.2.1, Page 6-89 *(5-35 reference not located)*	The mean annual flow in the Belyando River is 2,663GL per year and the median annual flow is 10,239 GL per year. The proposed yearly average extraction from the Belyando River is 10GL and is a small percentage of the Belyando River flow. The 10GL per year allocation is proposed to be assigned from the Strategic reserve for state purposes of 20,000ML for the Burdekin Basin Water Resource Area - Sub catchment E. The updated Project Description (SEIS Volume 4 Appendix B) and Mine Water Balance (SEIS Volume 4 Appendix K2) provide an updated on project water requirements and sources for input water.
27	Greenpeace Australia Pacific	Water Resources	Water supply	As the proponent proposes to fulfil their water needs from ground and surface water harvesting, there needs to be a closer examination of the impact this will have at the subcatchment level. The overview of water use in the Belyando/Suttor catchment is too coarse to understand the impact of the mine on water resources, and more detailed work on the water use and impacts on the Carmichael and Belyando Floodplain subcatchments is needed before the public can accurately understand how this mine will impact on the region.		Vol 2, Section 2.12.3 page 2-89 Volume 4, Appendix P2 - Preliminary Water Balance	An environmental assessment of the water supply options was undertaken by Hyder Consulting. This information has been incorporated into the SEIS Volume 4 Appendix K5, Revised Mine Hydrology Report.
27	Greenpeace Australia Pacific	Water Resources	Surface Water	Most alarmingly, the nature of the alteration to the Carmichael River and its flow regime is only cursorily treated. In the chapter on matters of national environmental significance, it is revealed that in the 60th year of the mine’s operation, the level of drawdown in neighbouring aquifers may be 21 metres. Furthermore, this period of operation proposes to extract 1000m3 from the Carmichael River per day, amounting to 7% of the river’s flow and to “Increase the duration of zero flow and/or low flow periods in the Carmichael River” (Matters of National Environmental Significance 5-35). The extent of this increase and of the associated impact is not discussed, rather, it is glibly asserted that “No water will be sourced from the Carmichael River” (Matters of National Environmental Significance 5-41).		Vol 4, App J, Page 5-34 to 5-41	The Updated Mine Hydrogeology Report (SEIS Appendix K1) further investigates consequences of the mine workings on the baseflow of the Carmichael River. Potential impacts of the expected reduction in flows is assessed in SEIS Appendix: - K6 Addendum to Mine Hydrogeology Report - K5 Revised Mine Hydrology Report - J4 Population Survey of Waxy Cabbage Palm Report - J3 Doongmabulla and Mellaluka Springs Report - J1 Revised Mine Ecology Report - H Revised MNES Report
27	Greenpeace Australia Pacific	Cumulative impacts	Water resources	There is no cumulative analysis of the water consumption and waste water processing of the mines in the region. The Alpha mine proposed using 7500ML water on average per annum, some of which will be extracted from the Belyando/Suttor catchment, and the Kevin’s Corner mine will use a similar amount. The cumulative impact of the groundwater extraction, and waste water disposal of these mines has not been addressed.		Volume 1, sections 8.3, 8.4	Opinion noted. Impacts on groundwater have been discussed further in revised hydrogeology report (refer to SEIS Volume 4 Appendix K1 Revised Mine Hydrogeology Report). This report has been prepared in accordance with the Project ToR and in consultation with the OCG.
27	Greenpeace Australia Pacific	Introduction	Environmental record of proponent	The Terms of Reference for the EIS required an outline of the environmental record of the proponent. This is not provided in the EIS, and must be corrected. Greenpeace has obtained evidence and reports that the environmental record of the proponent company in its home country India is not good, and provide this information below. (**Refer original submission for details of reports provided by Greenpeace)** We believe that the above information is relevant to the current proposal by this company to undertake a very significant project in a rural landscape, with a large area of potential critical habitat for an endangered species and near sensitive wetland springs fed by the Great Artesian Basin that harbour endemic species.		Vol 1, Section 1.1	Adani Mining Pty Ltd (Adani) is the proponent for the Carmichael Coal Mine and Rail Project. Adani is a subsidiary of Adani Enterprises Ltd, and forms part of the broader Adani Group of companies based in Ahmedabad, India. Adani is a registered Australian company with corporate governance and reporting obligations under Australian Law, distinct from the management and obligations of other Adani Group subsidiaries in other jurisdictions. Under both State and Federal laws, Adani is required to obtain all relevant approvals, including all necessary environmental approvals, prior to the commencement of a project. Adani has a proven record of obtaining and complying with all necessary approvals for its projects including its ongoing exploration program for the Carmichael Coal project. Adani is committed to complying with all required approvals for the Project.
28	Economists at Large	Economics	Economic impact assessment	We consider that there are significant problems with the Economic Assessment. Without addressing these issues, the assessment is unsuitable for decision making. These issues are: - Lack of cost-benefit analysis. - Lack of information presented to support the input-output analysis We believe that these issues need to be clarified and adjustments made to the Economic Assessment of the project to ensure a decision is made in line with the Queensland public interest. Doing so would not only allow for the best outcome in relation to this project, but could serve as a guide for other projects in the area and nationally.		Vol 1, Chapter 6 Vol 4, App H	Adani is a registered Australian company with corporate governance and reporting obligations under Australian Law, distinct from the management and obligations of other Adani Group subsidiaries in other jurisdictions.

28	Economists at Large	Economics	Economic impact assessment	The Economic Assessment of the Carmichael project is based on input-output analysis, with no cost-benefit analysis. To assess if the project is in the interests of the state and local communities, the Economic Assessment must be revised to include cost benefit analysis. While cost-benefit analysis is not explicitly required of the assessment, section 5.1.2 of the Terms of Reference for the project requires that the Economic Assessment: Describe both the potential and direct economic impacts including: - estimated costs, if material, on industry and the community by assessing the following: property values; industry output; and employment - potential land severance issues as a result of proposed rail infrastructure and proposed mitigation measures (including rail crossings) - the indirect impacts likely to flow to other industries and economies from the development of the project (and the implications of the project for future development)		Vol 1, Chapter 6 Vol 4, App H	Under both State and Federal laws, Adani is required to obtain all relevant approvals, including all necessary environmental approvals, prior to the commencement of a project. Adani has a proven record of obtaining and complying with all necessary approvals for its projects including its ongoing exploration program for the Carmichael Coal project.
28	Economists at Large	Economics	Economic impact assessment	- include the volume of extractive materials to be used (particularly limited local resources) and any measures proposed to mitigate identified impacts - the distributional effects of the proposal including proposals to mitigate any negative impact on disadvantaged groups - mitigation strategies to manage project impacts through relevant Government policies and programmes In other words, the Economic Assessment should assess all the positive and negative impacts or effects of the project on industry and the community. The Economic Assessment does not fully provide this though as it is based on input-output modelling, not cost-benefit analysis.		Vol 1, Chapter 6 Vol 4, App H	See the above response.
28	Economists at Large	Economics	Economic impact assessment	The use of input-output modelling to evaluate the impacts of projects is clearly against the recommendations of the Department of Infrastructure and Planning's Project Assurance Framework, which states: *The primary method of economic evaluation of public sector policies and projects is cost-benefit analysis. Input-output methodology (or the use of multipliers) is not a preferred methodology for economic evaluations. (Qld DIP 2011, p18)* The evaluation of mining projects with private sector involvement is no different, as is made clear by Eggert (2001, p31): *Summing up, a benefit-cost framework for assessing the effects of a mining project is useful, even essential, for evaluating the impact of a mining project on the economic development of a local community or region. Such a framework focuses our attention on a number of critical issues: What is the overall effect of a project? What are the costs, and are the parties bearing the costs being compensated? What are the net benefits and how are they distributed?*		Vol 1, Chapter 6 Vol 4, App H	Adani is committed to complying with all required approvals for the Project.
28	Economists at Large	Economics	Economic impact	Virtually the entire economics profession agrees that cost-benefit analysis is essential for project assessment, see for example Dobes and Bennett 2009; Ergas 2009 and Abelson 2011. In other states, cost-benefit analysis would be required for such a project; for instance, the NSW Department of Planning's Environmental Assessment requires:		Vol 1, Chapter 6 Vol 4, App H	See the above response.
28	Economists at Large	Economics	Economic impact assessment	It is important to understand the difference between cost-benefit analysis and input-output models. As the Department of Infrastructure and Planning explains: [Cost-benefit analysis should] *comprehensively identify and estimate as many costs and benefits of a project as can reasonably be measured, including those which can be thought of as social and environmental, [in order] to rank project options according to their net economic benefit. (p18)* Whereas economic impact assessment, such as Input-Output modelling: *typically measures the impact of a project on the volume of economic activity in a region (e.g. on gross domestic product or employment), (Qld DIP 2011, p23)*		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report)
28	Economists at Large	Economics	Economic impact assessment	Confusingly, the Economic Assessment uses the terms "benefits" and "costs" throughout the document. Often the authors' use of the terms is incorrect. For example: *Construction of the Project (Mine) is expected to generate on average over the construction years $78.2 million per annum in direct and indirect benefits on the Mackay region's GRP, a considerable proportion of which will be direct benefits such as purchase of local materials or services.* (Exec summary pX)		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report)

28	Economists at Large	Economics	Economic impact assessment	GRP is a measure of economic activity, not a measure of improvement in consumer or producer surplus, which is how economists consider a benefit. Purchase of materials and labour is also not a “direct benefit”. Such purchases are a cost to the mine and only represent a benefit to the providers to the extent that they are paid a price higher than the cost of their own resources. In an open economy like Australia, with functioning labour, capital and product markets, the providers of these goods and services will price them at their opportunity cost. In other words, these goods or services would have been used elsewhere in the absence of the project. The misleading use of the terms cost and benefit throughout the document, where what is meant is a change in expenditure levels or economic activity is inappropriate and contrary to standard economic analysis. This should be understood by professional economic consultants and must be corrected.		Vol 1, Chapter 6 Vol 4, App H	See the above response.
28	Economists at Large	Economics	Economic impact assessment	I-O models primarily estimate impacts on gross regional product. Economic activity (gross regional product (GRP)) is not a good measure of welfare, for three reasons identified by Abelson (2011) p49: 1. [GRP and other measures] include output produced by, and income accruing to: - non-resident owners of capital employed in the state; - non-resident labour including short-term casual labour arriving for a major event; - the Australian government via income and indirect taxes. 2. [GRP and other measures] make no allowance for the real cost of labour, i.e. the loss of household production or leisure which is embodied in labour’s reservation price. Therefore, it does not measure the net benefit to labour. 3. [GRP and other measures] do not account for any other non-market goods including consumer surpluses, health status, travel in non-work time or environmental impacts.		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
28	Economists at Large	Economics	Economic impact assessment	In summary (p54): *I–O models lack resource constraints and fail to capture significant welfare (consumer and environmental) impacts. They always produce a positive gain to the economy, however disastrous the event.* The ABS also explains some of the reasons why I-O modelling is inappropriate for project evaluation (5209.0.55.001 - Australian National Accounts: Input-Output Tables, 2008-09): **(refer original submission for detail)** In fact, the use of overstated impacts from input-output modelling to justify projects was a key reason the ABS stopped publishing tables of I-O coefficients: *Production of multipliers was discontinued with the 2001–02 issue for several reasons. There was considerable debate in the user community as to their suitability for the purposes to which they were most commonly applied, that is, to produce measures of the size and impact of a particular project to support bids for industry assistance of various forms.*		Vol 1, Chapter 6 Vol 4, App H	See the above response.
28	Economists at Large	Economics	Economic impact assessment	In the Economic Assessment for the Carmichael project, the inability of input-output modelling to evaluate the positive and negative impacts of the project are clearly evident. No Discussion of Consumer and Environmental Impacts - In the Environmental Impact Statement for the project, many social and environmental impacts for the Carmichael project are identified. These social and environmental impacts have economic value and can be quantified in monetary terms. These social and environmental impacts should be considered in an economic appraisal of the mine and railway, but are not evaluated in the Economic Assessment due to the Input-Output methodology used.		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
28	Economists at Large	Economics	Economic impact assessment	Some of the many environmental impacts arising from the construction and operational works of the mine and the rail project include: - Increased Greenhouse Gas Emissions; - Loss of habitat for native fauna including conservation significant fauna (EPBC Act listed fauna species and NC Act Listed Fauna). The project is to expected to have a significant impact on the black-throated finch (southern). Other species whose habitat will be reduced include, among others, the ornamental snake, the Australian painted snipe, the koala, the squatter pigeon and the yakka skink. - Reductions in groundwater; - Reduced air quality; and - Mine waste. In the Social Impact Assessment for the project, potential social impacts identified among others, were greater shortages in housing supply and decreased housing affordability; increased traffic, traffic delays and road maintenance; increased noise and dust and reduced visual amenity; increased ponding and fire risk; and disruption to cattle operations.		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).

28	Economists at Large	Economics	Economic impact assessment	Lack of supply–side constraints and Fixed prices: The Economic Assessment incorrectly assumes that that the capital and other expenditure arising from the construction and operation of the Carmichael mine and the railway represents a straight “benefit” to the Queensland economy. However, scarce resources will be used as a result of this expenditure that could have been put to other use (there are opportunity costs of the project), which need to be subtracted. These scarce resources have not been taken account of in the Economic Assessment due to the Input-Output methodology used. In the case of the Carmichael Project, a particular scarce resource noted in the Economic Assessment is labour within the region given very low unemployment. Given this, the Carmichael project’s use of labour will significantly increase costs to farms and businesses in the form of higher prices and reduced availability of labour and services. This was also noted in the Social Impact Assessment.		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
28	Economists at Large	Economics	Economic impact assessment	The Carmichael Economic assessment claims a $27 million[1] cost to agriculture from the loss of land, but this pales into insignificance when compared to the impacts on agriculture caused by effects on labour markets and exchange rates. Recent analysis of the China First Coal Project, by the project proponents (AEC group 2010), finds that that mine (smaller than the Carmichael Project) will reduce agricultural employment by 126 jobs and output by $42 million per year. The impacts on manufacturing are greater due to similar labour demands and exposure to export markets. Manufacturing employment will decline by up to 2,215 jobs while output will decline by over $1.2 billion per year. (table provided in original submission)		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
28	Economists at Large	Economics	Economic impact assessment	Fixed ratios for intermediate inputs and production, No allowance for purchasers’ marginal responses to change, Absence of budget constraints: The Carmichael Economic Assessment has all these problems as well. It assumes that industries have fixed input proportions and makes no mention of changes in firms and households’ buying decisions or of their budget constraints. Before further consideration is given to this project, it is essential the economic analysis be based on thorough cost-benefit analysis to understand if the Carmichael project is in the interests of the Queensland and local communities.		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
28	Economists at Large	Economics	Economic impact assessment	While input-output modelling is not suitable for decision making, we have also considered the accuracy of the input-output modelling for the Carmichael project, in case this is the only economic evaluation that will occur. To evaluate the accuracy of the I-O analysis presented, it is important to understand the basics of I-O analysis. (background provided in original submission)		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
28	Economists at Large	Economics	Economic impact assessment	The Economic Assessment employs the input-output model to estimate the impacts of the proposed Carmichael coal mine and railway on the Queensland economy. The changes the project would bring about – the direct and capital expenditure to construct the mine, as well as the operational costs of the mine– are estimated by the project proponents on pages 3.3 to 3.15. In the terms of our explanation above, these are the changes in X for the mining industry. The impact of these changes on three economic variables – gross regional product, household income and employment – are estimated on p 3.12 to 3.17. In the terms of our explanation above, these are the impacts Y on the wider economy.		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
28	Economists at Large	Economics	Economic impact assessment	Unfortunately, the Economic Assessment does not provide any background to its calculations for the impacts on gross regional product, household income and employment. This makes it very difficult to evaluate the accuracy of the projected impacts in the Economic Assessment, even from the basis of an input-output methodology. Without more information, the projected impacts in the Economic Assessment cannot be relied upon.		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
28	Economists at Large	Economics	Economic impact assessment	A discussion of the inter-industry coefficients (the values for A in our explanation) used to calculate the impacts of the project expenditure is required to ascertain whether the analysis is accurate or not. The coefficients need to be based on an empirical study of the industries in the Isaac Regional Council or the Mackay Statistical Division (the study area in the Economic Assessment). If the analysis is not based on empirically-derived coefficients relevant to the local region, the impacts will be overstated. There is no reference to such an empirical study in the sources listed for the input-output model in the Economic Assessment (p 1.5).		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
28	Economists at Large	Economics	Economic impact assessment	The Economic Assessment does list the Australian Bureau of Statistics (ABS) as a source. The ABS does provide multipliers for Australia as a whole and it may be that the Economic Assessment used these. However, these multipliers are not applicable for small regions as they overstate impacts. The ABS states that: *Multipliers that have been calculated from the national I–O table are not appropriate for use in economic impact analysis of projects in small regions. For small regions multipliers tend to be smaller than national multipliers since their inter–industry linkages are normally relatively shallow. Inter–industry linkages tend to be shallow in small regions since they usually don’t have the capacity to produce the wide range of goods used for inputs and consumption, instead importing a large proportion of these goods from other regions.*		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 E Revised Economic Assessment Report).

29	North Queensland Conservation Council	Economics	Economic impact assessment	Under guideline 5.12 of the Terms of Reference (ToR) the EIS must assess: 'the indirect impacts likely to flow to other industries and economies from the development of the project (and the implications of the project for future development)'. The crossreference table (Appendix C) state that this is provided in Vol.4, Appendix H, section 3.2. The assessment provided in the EIS does not address the requirement. A useful and rigorous assessment of the indirect impacts would require consideration and qualitative and quantitative analysis of all monetary and non-monetary impacts (including but not limited to non-tangible, residual and non-user costs and benefits, including of externalities associated with the development and all direct, indirect and cumulative) costs and benefits, and an assessment of the distribution of costs and benefits over the life of the project (LOP).		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
29	North Queensland Conservation Council	Economics	Economic impact assessment	The LOP is not considered in the analysis; time periods appear to vary from six to ten years with the occasional reference to 90 or even 150 years, making any comparative analysis impossible. NO discount rate is identified by which benefits over different time periods can be compared. Furthermore, positive and negative impacts are incomplete. For example, LOP costs of production costs are assessed, but LOP benefits are not, nor are LOP non-production costs.		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
29	North Queensland Conservation Council	Economics	Economic impact assessment	Given the nature of this particular proposal, the analysis should extent to international (ie cross-international-border) costs and benefits, and quantify the costs and benefits over the lifetime of both the proposal and the MNES that are likely to be affected. This is particularly the case when it is known that Australia's largest contribution to global climate change is its coal exports and that climate change is the number one threat to the Great Barrier Reef.		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
29	North Queensland Conservation Council	Economics	Economic impact assessment	All assumptions made in any economic analysis would needed to be stated in order to render the analysis fully transparent. Sensitivity analysis to test the impact of assumptions would be required.		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
29	North Queensland Conservation Council	Economics	Economic impact assessment	Given that industry operates entirely on the basis of cost/benefit analysis, such a requirement would not be onerous, especially given that much of the data required will be collated to meet other requirements of the guidelines. It is only when costs and benefits are compared that decisions about whether of not to allow damage to environmental and social values can be made by the public and decision-makers.		Vol 1, Chapter 6 Vol 4, App H	A revised economic assessment has been undertaken for the SEIS. Refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
29	North Queensland Conservation Council	Economics	Economic impact assessment	Use of Input-Output Analysis The EIS states (1.4.1) that 'The economic assessment is largely based on the inputoutput (I/O) method of impact determination'. As noted by Economists at Large in their 2012 submission on the Great Keppel Island resort Development EIS, ' In 2011 the Queensland government noted that The Queensland Department of Infrastructure and Planning agree the use of BCA (Benefit Cost Analysis) is the most suitable economic analysis to assess major projects, and recommend it as the preferred method of analysis over input-output (I-O) modeling. They stated: *The primary method of economic evaluation of public sector policies and projects is cost-benefit analysis. Input-output methodology (or the use of multipliers) is not a preferred methodology for economic evaluations. (Qld DIP 2011, p18)'*		Vol 1, Chapter 6 Vol 4, App H	In summary, the input-output method is an economic impact assessment method, whereas cost-benefit analysis is an economic evaluation method. The objective of the economic assessment required by the Project ToR is to identify the potential economic impacts of the project, including the direct and indirect impacts. The input-output methodology is one method of estimating such impacts as it focuses on economic activity impacts and enables direct and indirect contributions to output and employment to be estimated from inputs in the form of spending during both the construction and operational periods. This method, therefore, is consistent with the outputs sought from the ToR. In contrast, cost-benefit analysis estimates cost and benefits (monetised and non-monetised) of a project using discounted cash flow analysis. Unlike the input-output method, the outputs from a cost-benefit analysis would be the net present value (NPV), internal rate of return (IRR) and benefit-cost ratio (BCR). These indicators are decision making indicators to determine whether a project should go ahead or not go ahead (e.g. if NPV is greater than zero, then it is prudent to invest) and to prioritise investment options. The cost-benefit analysis method essentially measures the net worth of a project, not its economic impacts. Cost benefit analysis is data intensive, requires forecast of revenues and benefits, and is generally done internally before the proponents of a project decide to proceed or not proceed.
29	North Queensland Conservation Council	Economics	Economic impact assessment	Economists at Large went on to state, *Agreement in the preferential use of BCA over I-O analysis is consistent across the majority of the economics profession, see for example (Dobes, Leo and Bennett 2009; Ergas 2009; Abelson 2011) and many others.* In the case of Carmichael EIS, the source, date and size of the 'multiplier' does not even appear to be provided. NQCC contends that the economic analysis undertaken for the Carmichael EIS is inadequate.		Vol 1, Chapter 6 Vol 4, App H	See the above response.
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	Sustainable development Under section 5.2 of the ToR, the proponent is required to provide 'a comparative analysis of how the project conforms to the objectives for 'sustainable development'— see the National Strategy for Ecologically Sustainable Development'. (NSESD core objectives and guiding principles provided in original submission) These guiding principles and core objectives need to be considered as a package. No objective or principle should predominate over the others. A balanced approach is required that takes into account all these objectives and principles to pursue the goal of ESD.		Vol 1, section 8	Comment noted.

29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	ToR 5.2 continues: *This analysis should consider the cumulative impacts of the project (both beneficial and adverse) from a life-of-project perspective [emphasis added], taking into consideration the scale, intensity, duration and frequency of the impacts to demonstrate a balance between environmental integrity, social development and economic development.* *This information is required to demonstrate that sustainable development aspects have been considered and incorporated during the scoping and planning of the project.* The proponents response to this complex and detailed task is, according to the crossreference table (Appendix C): V1.8 Table 8.9. The problems associated with Voiume 1.8, Table 8.9 are discussed below. NQCC contends that the EIS presentation in relation to sustainable development is totally inadequate.		Vol 1, section 8	Comment noted.
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	Cumulative impacts - Under ToR 7 of the EIS, the proponent is required to *Provide a summary of the project's cumulative impacts and describe these cumulative impacts both in isolation and in combination with those of existing or proposed project(s) publicly known or advised by DEEDI to be in the region, to the greatest extent practicable. Cumulative impacts should be assessed with respect to both geographic location and environmental values. Also assess cumulative impacts on the groundwater resources in the area, including impacts on existing users and any groundwater-dependent ecosystems. Present the methodology used to determine the cumulative impacts of the project, detailing the range of variables considered, including where applicable, relevant baseline or other criteria upon which the incremental aspects of the project have been assessed.*		Vol 1, section 8	Comments noted
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	The 'cumulative assessment' is presented in Vol.8 of the EIS. First, NQCC draws attention to the fact that the 'Cumulative Impact' presented in the Carmichael EIS is NOT, despite its title, a Cumulative Impact Assessment (CIA). The material presented in the EIS is merely a partial addition of some of the relevant impacts on aggregated environmental values.		Vol 1, section 8	Comments have been noted.
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	Problems with the CIA as presented: 1. Failure to assess all relevant projects The point of CIAs is to overcome the 'death by 1000 cuts' whereby individual projects may not be a problem, but the total of individual projects are. Death by 1000 cuts often occurs when individual projects are too small to be considered (especially too small to be considered in relation to MNES) but when very many such small projects occur and, cumulatively, have an impact. The CIA undertaken for the Carmichael EIS fails to take into account these multiple small impacts, focusing only on a small number of very large proposed actions. Until such time as the totally of impacts are assessed the damage to MNES is likely to continue.		Vol 1, section 8	Comments noted. The EIS cumulative impact assessment was undertaken in accordance with the ToR which required inclusion of publically known projects or projects advised by DEEDI to be in the region. The Methodology for the assessment and baseline data used was presented. Cumulative impacts to MNES were presented in regards to the relevant controlling provisions. For the SEIS a revised cumulative impact assessment has been prepared which focuses on MNES (refer to SEIS Volume 4 Appendix H).
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	Failure to include in any way anticipated mega-projects, such as MacMines on the basis of lack of full information is inappropriate. Impacts could have been estimated, or the precautionary principle brought into play. The CIA also fails to take into account consequential impacts, such as the proposed T0 at Abbot Point, the proposed Dudgeon Point expansion; and the proposed Goonyella to Abbot Point Rail project. Consequential impacts are a fundamental component of CIAs.		Vol 1, section 8	Comments noted. The cumulative impact assessment methodology was developed in accordance with the ToR which requires the inclusion of existing or proposed projects that are publicly known to the greatest extent practicable. Inclusion of speculative assumptions of proposed projects was not deemed to be consistent with the requirements of the ToR. Consequential impacts were considered for relevant projects in this assessment, and vice versa those projects listed have also considered consequential impacts. Refer to revised MNES Report, SEIS Volume 4 Appendix H. Cumulative impacts from dredging and port activities are outside the scope of this EIS and have not been identified within the Project ToR. Therefore they have not been included within the assessment.
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	2. Failure to address synergistic impacts One of the main reasons for CIAs is to enable the consideration of synergistic impacts – the way in which different impacts interact such that the sum is greater than to the two parts. An example would be the impact of habitat clearance, and dust on Blackthroated finches.		Vol 1, section 8	Comments noted. The EIS cumulative impact assessment was undertaken in accordance with the ToR which required inclusion of publically known projects or projects advised by DEEDI to be in the region. The Methodology for the assessment and baseline data used was presented. Cumulative impacts to MNES were presented in regards to the relevant controlling provisions. For the SEIS a revised cumulative impact assessment has been prepared which focuses on MNES (refer to SEIS Volume 4 Appendix H).
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	3. Obscurity as to the means by which 'relevance factors' (ratings of 1 to 3) have been determined. According to section 8.1.4 of the EIS, the critical relevance factors were based on 'professional judgment, past experience with similar developments and Project information presented in [other volumes of the EIS]'. Presumably no external experts had input into the determination of these critical factors, thus 'professional judgment' can only have arisen from 'past experience with similar development'. A desktop review indicates that previous Adani experience with similar developments would be restricted to the joint NQBP, Adani, GVK, BHPBilliton Analysis undertaken for terminal development at Abbot Point. That study (like the Carmichael one) is additive in its approach; it has not yet addressed synergistic impacts and it excludes relevant impacts.		Vol 1, section 8.1.4	Comments noted. The EIS cumulative impact assessment was undertaken in accordance with the ToR which required inclusion of publically known projects or projects advised by DEEDI to be in the region. The Methodology for the assessment and baseline data used was presented and was not prescribed under the ToR. The cumulative impact assessment was undertaken by the EIS consultant - GHD Pty Ltd.

29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	Given the lack of experience (and thus limited basis for professional judgment) the determination of ratings (1 to 3) in Table 8.9 cannot be relied upon. The table is virtually a black box approach with the project proponents seeming to allocate a rating of 1 to 3 on the basis of little hard evidence. The fact that there is no peer review of this largely hidden process makes the 'CIA' presented of very little credibility or value.		Vol 1, section 8	Comments noted as a general opinion on the process used. The EIS cumulative impact assessment was undertaken in accordance with the ToR. The Methodology for the assessment and baseline data used was presented and was not prescribed under the ToR. The cumulative impact assessment was undertaken by the EIS consultant - GHD Pty Ltd. Peer review was not a requirement under the ToR generally for the EIS, and neither was it required specifically for the cumulative impact assessment.
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	4. Credibility of ratings given - Within Table 8.9, the relevance factors attributed seem illogical. Why is the impact on water (surface and ground) of long duration, by the impact on aquatic ecology not?		Vol 1, section 8	Comments noted. Water impacts in regards to drawdown and availability are attributable to ongoing operational water requirements of the project, mostly mining operations. These impacts are also expressed post closure. Aquatic ecology impacts are expressed through construction and operations as the key impact periods due contributing factors such as ground disturbance, runoff and discharges. These factors are predicted to be minimal during the post closure phase. Impacts on water resources is included within the updated hydrology and hydrogeology reports prepared for the SEIS (refer to SEIS Volume 4 Appendix K5 Revised Mine Hydrology Impact Assessment Report and K1 Revised Mine Hydrogeology Report) Impacts on Aquatic Ecology have been included within the revised ecology report prepared for the SEIS (refer to SEIS Volume 4 Appendix J1 Revised Mine Ecology Report).
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	5. Credibility of total relative impacts - According to Table 8.9, the cumulative economic impact of the projects included in the CIA is a positive impact of 9. (NOTE, this is less than the cumulative negative impact on just one environmental value, Terrestrial Ecology (rated as 10)). Regardless of this, the economic analysis in the EIS is inadequate (see above), relying as it does almost solely on monetary benefits, with little consideration of monetary costs (eg, jobs lost as a result of the two-speed economy to which the project contributes) and no quantitative consideration of non-monetary costs or benefits.		Vol 1, section 8	Comments noted as a general opinion on the process used. The EIS cumulative impact assessment was undertaken in accordance with the ToR. The Methodology for the assessment and baseline data used was presented and was not prescribed under the ToR. The cumulative impact assessment was undertaken by the EIS consultant - GHD Pty Ltd. The economic analysis used an Input/Output model as required under the ToR. The economic impact analysis provided outputs in regards to local, regional, national and international economic impacts and benefits. The revised analysis can be found in the SEIS, Volume 4 Appendix E.
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	6. Balance of cumulative impacts - While the cumulative impacts on the economy are rated as positive 9, the sum of the impacts on the environmental values is negative 87. This would more than suggest that the costs vastly outweigh the benefits of the proposed project.		Vol 1, section 8	Comments noted as a general opinion on the process used. The EIS cumulative impact assessment was undertaken in accordance with the ToR. The Methodology for the assessment and baseline data used was presented and was not prescribed under the ToR. The cumulative impact assessment was undertaken by the EIS consultant - GHD Pty Ltd.
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	7. Distribution of benefits and costs - Adani is an Indian-owned company; the majority of net economic benefit would accrue in Indian; however, the long term cumulative costs would be experienced in Australia. This is not addressed in Chapter 8 (Cumulative Impacts), nor in the EIS as a whole.		Vol 1, section 8	The economic impact analysis provided outputs in regards to local, regional, national and international economic impacts and benefits. The revised analysis can be found in the SEIS, Volume 4 Appendix E.
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	8. Lack of adequate baseline studies against which to measure additional impact - A baseline study was undertaken for assessment of social impacts, but many other baseline studies appear to be either missing or still to be undertaken/completed. The status of many values are noted merely as the rating they achieve on Federal and State lists. This gives no baseline against which to measure impact.		Vol 1, section 8	Comments noted however no indication provided as to the "baselines" that are missing from the EIS. Baseline studies were undertaken across the requirements of the ToR which included social, economic and environmental baselines. Updated impact assessment and baselines are included in the SEIS. For example, Social Impact Assessment (Volume 4 Appendix D1), Economic Assessment (Volume 4 Appendix E), Matters of National Environmental Significance (Volume 4 Appendix H).
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	9. Use of 'Baseline' data - The limitations of baseline data on the current health of ecosystems in the project area (as suggested by Table 8.9) are demonstrated by the fact that the existing 'health' (the baseline) for several aggregated factors (such as 'Terrestrial Ecology' rather than birds or even Black-throated finches) are merely given a joint, unexplained and unjustified rating of sensitivity of 1 to 3. Sensitivity is, according to GHD (personal communication with GHD, 6.2.13) a measure of resilience, with 1 being resilient; 2 being less resilient; and 3 being least resilient. Thus, for example, 'Land Use;' is 'resilient' while Groundwater is 'least resilient'. There is no discussion of recovery time in relation to resilience; there needs to be. And, of course, resilience does not necessarily reflect the current health. Even so, the numbers allocated to the Environmental Values are illogical. For example, why is Surface Water rated 3 (least resilient) while the water quality-dependent Aquatic Ecology rated as 2 (more resilient)?		Vol 1, section 8	Comments noted in regards to opinion on the process used. Comments noted however no indication provided as to the "baselines" that are missing from the EIS. Baseline studies were undertaken across the requirements of the ToR which included social, economic and environmental baselines. Baseline values were determined by the Consultant using a methodology consistent with environmental impact assessment practices.
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	10. Reliance on the assumption that the total is merely the sum of the parts - The concept of 'cumulative impact' is founded on the recognition that the sum is often greater than the parts. However, throughout, the CIA, this is not acknowledged. This problem exists in the discussion of surface water hydrology, groundwater, and air quality.		Vol 1, section 8	Comments noted in regards to opinion on the process used.
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	11. Failure to consider consequential impacts - Chapter 8 of the EIS notes that Abbot Point Terminal 0, Dudgeon Point expansion and the Goonyella to Abbot Point Railway are all relevant projects; however, impacts from these projects are not included in the CIA (see Table 8.5).		Vol 1, section 8	Comments noted. Consequential impacts were considered for relevant projects in this assessment, and vice versa those projects listed have also considered consequential impacts. Cumulative impacts from dredging and port activities are outside the scope of this EIS and have not been identified within the Project ToR. Therefore they have not been included within the assessment. The updated MNES Report provides an assessment of relevant projects (SEIS Volume 4 Appendix H).
29	North Queensland Conservation Council	Cumulative impacts	Cumulative impact assessment methodology	12. False assumptions about faunal populations - Throughout the CIA, the assumption is made that if fauna is dislocated by clearing of habitat, there will automatically be 'room' for displaced populations in the remaining areas of habitat. Unlike human populations, fauna are less likely to 'squash in'; there are limits to population density that cannot be overreached. Loss of suitable habitat will lead to a decrease in population. Suitable habitat in other locations will already be catering for the optimal population of dependent species.		Vol 1, section 8	Comments noted as a general opinion regarding findings. Refer to the revised mine ecology (Volume 4 Appendix J1), Black throated finch report (Volume 4 Appendix J2) and MNES report (Volume 4 Appendix H) in regards to further commentary regarding the known and potential distribution of species, for example the Koala, and how this has been considered in the context for displaced populations. Nevertheless, in the case of unavoidable or residual impacts, the Offsets Strategy has been revised to include these environmental values (Refer to Volume 4 Appendix F).

30	Duus	Greenhouse Gas Emissions	Greenhouse Gas Emissions	In section 8, 'Greenhouse Gas Emissions', the EIS does not account for the vast majority of greenhouse gas emissions associated with the proposed project, in the form of CO2 from burning the product coal. The EIS estimates the total annual scope 1&2 emissions would be 2.29 million tonnes of CO2-e (Volume 2, Table 8-2, p8-3). This stands in stark contrast to my calculation for emissions associated with the annual combustion of 60 million tonnes of product coal, which equals around 143 million tonnes of CO2-e. That is, the EIS currently only accounts for less than 2% of total annual emissions that would result from this proposed mine. This failure to account for the full climate impact from this proposed mine is well short of Australian public expectations on this issue.	Emissions from the full life-cycle of the mine and mine product must be considered. These are sometime labelled 'scope 3' emissions, but given that the proponent for the mine is the same one intending to burn the coal, there is an even greater responsibility for them to make public the full climate impact from their intended activities. It is also important that scope 3 emissions be considered for all the projects proposed for the region, as part of the cumulative impact assessment.	Vol 2, Section 8 Vol 3, Seciton 8 Vol 4, App T and App AE	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
30	Duus	Cumulative impacts	Cumulative impact assessment methodology	It is severely inadequate that only projects "currently under investigation or expected to commence investigations in the next 5 years" (Volume 1, Section 10, 8.2.1, p 8-4) are considered in the cumulative assessment section. Only four other mining projects are taken into consideration (Alpha Coal Project, Kevin's Corner, Galilee Coal, South Galilee Coal Project), where in fact there are currently around ten projects being discussed in the region. Given the scale of the proposed projects in the Galilee Basin, which if they go ahead would result in local impacts persisting for hundreds of years, this assessment needs to be as comprehensive as possible. As it stands, the assessment cannot be claimed as a comprehensive cumulative assessment and is likely to grossly misrepresent to actual impacts.	Rather than limiting the assessment only to reasonably advanced proposals, all possible developments in the Galilee Basin must be considered so as to give an accurate picture of the possible and likely cumulative impacts. Anything less than this is inadequate considering the scale and endurance of serious impacts in the region. The terms of reference for this kind of study should be developed in wide and open consultation with the region's resident population as well as the Australian public more broadly. Matters relating to biodiversity, water, communities, other industries existing in the area, and global climate impacts are just some of the topics that are likely to be identified.	Vol 1, Section 8	Comments noted. The EIS cumulative impact assessment was undertaken in accordance with the ToR which required inclusion of publically known projects or projects advised by DEEDI to be in the region to the greatest extent practicable. The Methodology for the assessment and baseline data used was presented. Cumulative impacts to MNES were presented in regards to the relevant controlling provisions. For the SEIS a revised cumulative impact assessment has been prepared which focuses on MNES (refer to SEIS Volume 4 Appendix H).
30	Duus	Cumulative impacts	Cumulative impact assessment methodology	Company funded cumulative impact reports that are undertaken mine-by-mine as part of environmental impact assessment for individual projects, are grossly inadequate to account for the likely cumulative impacts from the proposed mines in the Galilee Basin.	The likely cumulative impacts from all the proposed, and likely to be proposed, mines in the Galilee Basin would be more appropriately investigated and reported by a fully independent body.	Vol 1, Section 8	Comment noted as opinion on the cumulative impact process required under State and Federal legislation.
30	Duus	Matters of National Environmental Significance	Black-throated finch	The EIS openly recognises the impact the proposed project would have on the Endangered Black-throated Finch (Poephila cincta) – for instance it states: A total of 11,419 ha of the 26,044 ha of identified black-throated finch (southern) important areas is proposed to be impacted by vegetation clearing over the life of the Project (Vol 1, Section 10, p 8-21). The significant clearing and landscape disturbance that would result from the other proposals in the region further exacerbates this concern. There is no guarantee that adequate habitat will remain, or that the species will migrate to any targeted 'off-set areas'. There is a serious risk that the cumulative impact from these mines would only result in 'off-set' money being thrown at research and token gestures towards the preservation of this species, rather than a genuine commitment to retaining the habitat where the species is currently found.	The severe impact that this proposed project would have on this Endangered species warrants refusal of the project.	Vol 1, section 10 Vol 4, App N3	Opinion noted.
30	Duus	Matters of National Environmental Significance	Black-throated finch	Climate change impacts on biodiversity - The current consideration of terrestrial ecosystem impacts in this EIS does not take into account the likely habitat changes that will result from predicted climate change in the region. This is a major deficit, as climate change is likely to have tangible impacts on a range of ecological, hydrological and climatic factors. For instance, see: (web URLs provided in original submission)	It is crucial that ecological impacts be considered in light of anticipated changes and pressures resulting from climate change over the next several decades. Without certain knowledge of the particular ramifications of climate change in the area, a precautionary approach would see as much of the remnant ecosystems as possible retained in the area, to provide the best opportunity for ecological buffering and adaptation.	Vol 1, section 10 Vol 4, App N3	Opinion noted.
30	Duus	Introduction	Environmental Record of Proponent	Adani is facing serious complaints against its operations in India, which have had severe impacts on local environments and livelihoods. This has included an order from the Indian High Court to halt construction at a number of sites, after finding that the company had failed to obtain the necessary environmental clearances and that in fact the development was illegal (see http://www.abc.net.au/7.30/content/2012/s3612971.htm). This example raises questions about Adani's respect for laws and regulations, and whether or not a company with such a reputation should be allowed to operate in Australia at all. Again, this would seem to fall well short of Australian public expectations.	A full independent investigation into Adani's previous and current dealings is warranted to establish whether they are an appropriate company to operate in Australia.	Vol 1, Section 1.1	Adani Mining Pty Ltd (Adani) is the proponent for the Carmichael Coal Mine and Rail Project. Adani is a subsidiary of Adani Enterprises Ltd, and forms part of the broader Adani Group of companies based in Ahmedabad, India. Adani is a registered Australian company with corporate governance and reporting obligations under Australian Law, distinct from the management and obligations of other Adani Group subsidiaries in other jurisdictions. Under both State and Federal laws, Adani is required to obtain all relevant approvals, including all necessary environmental approvals, prior to the commencement of a project. Adani has a proven record of obtaining and complying with all necessary approvals for its projects including its ongoing exploration program for the Carmichael Coal project. Adani is committed to complying with all required approvals for the Project.
30	Duus	Water Resources	Groundwater	In regards to the likely groundwater impacts from the proposed mines in the Galilee Basin, the following statement is made in the EIS: *To the north of the Project is the China Stone (MacMines) project. Given this project's proximity, there is potential for cumulative impacts to occur with this project. However given the limited information currently available in regard to this project and that it is yet to complete an EIS the extent of potential impact cannot be established (Volume 1, Section 10, p8-26).* Again, this inadequate dealing with the likely cumulative impacts from the proposed mines in the Galilee Basin is cause for serious concern. Even just considering the Carmichael and China Stone proposals, there is potential for groundwater impacts to extend tens of kilometres from the mine sites, and for groundwater recovery not to occur for hundreds of years – going on the kinds of impacts projected for the Alpha and Galilee projects. Assessing these projects one by one is completely untenable for all the existing residents and industries in the region which will be severely affected.	The likely extent of groundwater impact in the region warrants refusal of the project. At the very least, a comprehensive cumulative assessment should consider the total likely impact on groundwater from all the current and likely proposed mines before any approvals are given.	Vol 1, Section 8 Vol 2, Section 6	Opinion noted. Impacts on groundwater have been discussed further and additional work incorporated in the revised hydrogeology report (refer to SEIS Volume 4 Appendix K1 Revised Mine Hydrogeology Report and Appendix K6 Addendum to Mine Hydrogeology Report). This report has been prepared in accordance with the Project ToR and in consultation with the OCG, DEHP, DNRM and DotE.

31	QPS	Social	Police resources	'It is expected that the Project (Mine and Rail) will reach peak workforce in 2015 with approximately 3,700 workers … full production from 2022 onwards and it is assumed that workforce numbers will be relatively consistent after this time, at around 3,000 workers.' There will be a likely increase in police calls for service and a significant impact on road safety and traffic policing. Clermont Police was recently upgraded from 4 to 5 staff, with Clermont population around 3000. This project will double that population, and an increase in policing numbers and resources is required to not only police the Carmichael mine location, but to continue the policing presence in Clermont (some 2.5 hrs drive from the mine and accommodation village).	Based on information provided by the Proponent the project will require QPS in increase staffing resources from 5 to 8 (minimum). The proponent has outlined in 7.9 Emergency Services Planning and Consultation "making resources available to emergency service providers when at the mine site, ranging from office space to use of equipment". The QPS acknowledges and appreciates the proponent's proposal and wishes to continue discussions with regards to appropriate police facilities at the accommodation village including accommodation & a designated secure QPS office. The QPS also requests the Coordinator-General conditions the proponent to provide, at no cost to the State: a) At the Accommodation Village - office space for up to 4 police, accommodation for police, suitable radio, telephone and internet communications. b) At Clermont – housing for 3 additional police officers. Housing to be 1 x 3 b/r house, 1 x 2/br duplex complex (for 2 families or barracks). c) Upgrade of the Clermont Police Station facility to accommodate a further 3 police officers.	Vol 1 Project Wide 3.3.2 Project Workforce Profile Vol 4 App G Section 3.7	To manage potential impacts on emergency services Adani will engage in ongoing consultations with the regional service providers to further investigate and monitor resourcing requirements. This includes investigating vehicles and staff requirements, through liaising with Queensland Police at a State and local level. This process will be supported through the formation of an Emergency Services Consultative Committee. Adani is has further committed to: • 1 x office • 2 x workstations • Access to a meeting room • 1 x vehicle • Accommodation at the village • Upgrade to existing communication towers for secure network. This would also accommodate other services such as QRFS and QAS. Also refer to Appendix D1 Section 8.9 and SIMP SEIS Volume 4 Appendix D1 Section 3.8. Adani will continue to work closely with QPS and other emergency service providers with regards to services and emergency responses. This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.3.11.
31	QPS	Social	Police resources		d) Two (2) further police vehicles to address the significant distances being travelled by QPS and wide load escorts. This will ensure a vehicle is available in Clermont if officers are responding to duties outside Clermont township. QPS Contact: District Officer, Mackay – Ph: 49672266	Vol 1 Project Wide 3.3.2 Project Workforce Profile Vol 4 App G Section 3.7	See the above response.
31	QPS	Social	Housing	HOUSING – QPS acknowledges the difficulty in one project assessing the cumulative impact of many projects with unknown or immature parameters. However, based upon empirical evidence in the nearby Bowen Basin, it is reasonable to expect that there will be upward pressure on housing affordability in the regions encompassing the project/s footprint (even though FIFO is proposed). Housing affordability has a direct impact on the ability of the QPS to attract officers to work in the area. The availability and cost of housing being an important consideration. Note: It is acknowledged as per 8.2.1 Cumulative Impacts – Adani will not be the sole impost on QPS, however the scale of this project indicates it will have significant impact.	(as per recommendation for 31A)	Vol 1 Project Wide 3.3.2 Project Workforce Profile	To manage potential impacts on emergency services Adani will engage in ongoing consultations with the regional service providers to further investigate and monitor resourcing requirements. This includes investigating vehicles and staff requirements, through liaising with Queensland Police at a State and local level. This process will be supported through the formation of an Emergency Services Consultative Committee. Adani is has further committed to: • 1 x office • 2 x workstations • Access to a meeting room • 1 x vehicle • Accommodation at the village • Upgrade to existing communication towers for secure network. This would also accommodate other services such as QRFS and QAS. Also refer to Appendix D1 Section 8.9 and SIMP SEIS Volume 4 Appendix D1 Section 3.8. Comments regarding housing availability and affordability are noted and addressed in the revised SIA and SIMP (SEIS Volume 4 Appendices D1 and D2). Adani will continue to work with the QPS and other government agencies with regard to potential cumulative impacts. This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.3.11.
31	QPS	Social	Police resources	'*… there is a high risk of damage to the road infrastructure, especially local roads which are not designed for heavy and wide traffic … Transport of materials associated with the rail construction will also have an impact on the road network with an increased number of heavy vehicles transporting equipment and supplies to various locations along the rail alignment* .' Police will need to significantly increase their presence in the north-west of the Clermont Division, but the overall increase of traffic movement in the division will be substantial. Further funding would be required for equipment including speed detection devices, random breath testing devices, portable intoxilyzer and mobile data/computer devices.	As per the above suggested solution: QPS requests the Coordinator General conditions the proponent to provide, at no cost to the State: a) Two (2) further police vehicles to address the significant distance being travelled by QPS, pending wide load escorts and to ensure a vehicle is available in Clermont if officers are responding to duties outside Clermont.	Vol 1 Project Wide 3.3.6 Roads, Traffic and Safety	To manage potential impacts on emergency services Adani will engage in ongoing consultations with the regional service providers to further investigate and monitor resourcing requirements. This includes investigating vehicles and staff requirements, through liaising with Queensland Police at a State and local level. This process will be supported through the formation of an Emergency Services Consultative Committee. Adani is has further committed to: • 1 x office • 2 x workstations • Access to a meeting room • 1 x vehicle • Accommodation at the village • Upgrade to existing communication towers for secure network. This would also accommodate other services such as QRFS and QAS. Also refer to Appendix D1 Section 8.9 and SIMP SEIS Volume 4 Appendix D1 Section 3.8. Adani will continue to work closely with QPS and other emergency service providers with regards to services and emergency responses (refer SEIS Volume 4 Appendix D2 Social Impact Management Plan). This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.3.11.
31	QPS	Social	Police resources	The number of marked police cars impacts on the QPS's ability to provide timely and adequate police services. In addition, the proponent needs to engage the QPS for Special Services, particularly over-dimensional wide load escorts. The cumulative impact of all projects in the Galilee Basin may place unfeasible requests for these resources. A proportionate contribution by the various project proponents will help alleviate this pressure.	The QPS also request the proponent to provide a detailed timetable of all heavy vehicle movements on public road networks, showing timing and duration of major work programs, so the QPS can assess and plan for a policing response to ensure public safety on the roads. The QPS requests the proponent provide heavy vehicle intercept areas in any road upgrades, to ensure safety to all persons (drivers/public/police) when intercepting vehicle for traffic enforcement.	Vol 1 Project Wide 3.3.6 Roads, Traffic and Safety	Comments are noted. Details of all vehicle movements will be provided when final construction and operation schedules are developed.

31	QPS	Transport	Traffic management plan	The QPS also requests the proponent address any 'park up' rest areas proposed. Given the traffic issues that will impact the surrounding roads to the mine, driver fatigue will be a further issue and 'park up' areas could assist in mitigating this risk. The QPS also has concerns about the upgrading and additional signage required on the roads, to reduce the probability of persons becoming lost, especially given the current poor communications and vast distances between fuel stations and services.	The proponent should ensure there is adequate provision for 'park up' rest areas with suitable facilities (inc. toilets) and, through negotiation with DTMR, fund the provision of additional rest areas to meet the additional volume of transport and contractor vehicles travelling to and from the major provincial areas. Proponent to engage with DTMR with regards to upgrading and improving road signage.	Vol 1 Project Wide 3.3.6 Roads, Traffic and Safety	Comments regarding 'park up' rest areas and road signage are noted. Adani will consult with DTMR and QPS regarding the need for additional 'park up' rest areas and road signage. Relevant management and mitigation measures identified from consultation will be incorporated into the revised traffic management plan for the project (Mine and Rail). This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.2.10 and 2.3.10.
31	QPS	Social	Police resources	Increased pressure on Police for movement of over-dimensional permits and escorts on roads is a concern for QPS. As per the QPS response in the ToR 'wide loads to and from this site is expected to increase significantly … the roads within the area described are of poor quality … the roads have no shoulders of significance and in some areas as little as 6.4m across. The extra number of wide loads travelling along these roads will affect the driving public …increases in police resources will be required to accommodate the servicing of wide loads and general enforcement issues.' The QPS currently has one (1) police vehicle and one (1) escort vehicle (for wide loads only) at Clermont.	As per the first submission, QPS requests the Coordinator-General conditions the proponent to provide, at no cost to the State, two (2) additional police vehicles to address the impending significant impact that the wide load escorts, traffic enforcement and increased calls for service will have on the QPS. The QPS requests the proponent provide a detailed timetable of wide load escorts, a minimum of 3 months in advance of requirement, so that police can plan the resourcing (both human and physical resources) to meet the increase in demand. The QPS is the final approval authority for permit approvals for over-dimensional vehicles and traffic management for conforming loads. Considering the probable quantity of equipment and material to be transported, early engagement with the QPS will assist in maximising personnel safety and minimising project impact.	Vol 1 Project Wide 3.3.6 Roads, Traffic and Safety	Comments are noted. Details of all vehicle movements will be provided when final construction and operation schedules are developed. Adani will continue to work closely with QPS and other emergency service providers with regards to services and emergency responses (refer SEIS Volume 4 Appendix D2 Social Impact Management Plan). This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.2.11 and 2.3.11.
31	QPS	Social	Police resources	Due to the isolated location of the mine and accommodation camp, there is currently little to no operational communications for QPS and emergency services. Radio communications is vital for QPS, particularly with regards to critical disaster management, daily policing business and officer and community safety. The QPS (Sgt Steve Falzon, Mackay Radio and Electronics Section) has been in discussions with the proponent (Peter Drysdall) to discuss communications. The issue for QPS is that the proponent's infrastructure (towers) will be located in areas that are not suited to police requirements for coverage of the public road networks surrounding the mine. The proposed infrastructure by the proponent will provide coverage for the mine site and rail corridors, not particularly the surrounding roads that police will need communications. The proposed communications by the proponent will provide excellent secondary communications for police, however that primary and critical form of voice communication for QPS is UHF radio.	The QPS requests the Coordinator-General conditions the proponent to provide, at no cost to the State: a) a new communications tower (radio repeater) located between Mt Rolfe and the mine site. Approximate cost - $225K. b) an upgrade to the northern Plain Creek site and possibly the Mt Donnybrook site. Approximate cost - $80K. c) The supply of UHF radio repeater and linking modules and associated equipment. Approximate Cost - $50K. It is requested that the proponent continue discussions with the QPS with regards to communications. QPS Contact – Sgt Steve Falzon (Mackay Police District Ratio & Electronics Section) – Ph: 49683450.	Vol 1 Project Wide 3.3.8 Capacity of Social Services and Infrastructure	To manage potential impacts on emergency services Adani will engage in ongoing consultations with the regional service providers to further investigate and monitor resourcing requirements. This includes investigating vehicles and staff requirements, through liaising with Queensland Police at a State and local level. This process will be supported through the formation of an Emergency Services Consultative Committee. Adani is has further committed to: • 1 x office • 2 x workstations • Access to a meeting room • 1 x vehicle • Accommodation at the village • Upgrade to existing communication towers for secure network. This would also accommodate other services such as QRFS and QAS. Also refer to Appendix D1 Section 8.9 and SIMP SEIS Volume 4 Appendix D1 Section 3.8. Adani will continue to work closely with QPS and other emergency service providers with regards to services and emergency responses (refer SEIS Volume 4 Appendix D2 Social Impact Management Plan). This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.3.11.
31	QPS	Social	Police resources	'QPS has raised similar concerns with potential for an increase in rural crime, including illegal hunting, trespass, 4WD damage to properties, theft, and break-ins … QPS also identified the potential for the mine activity to increase undesirable activities such as gangs, prostitution and drug use.' Possible increase in rural crime from itinerant workers and calls for service with regards to mental health incidents.	The QPS maintains that an increased police presence will be required in the Clermont Division, and respectfully suggests that an increase of staffing from 5 to 8 staff will accommodate the increase in calls for service and level of proactive policing that will be required to adequately police the larger population in the division. (Ref: Suggested solution to Project Wide - 3.3.2 Project Workforce Profile) - **comment 31A** - The QPS also recommends a joint partnership between the proponent, QAS, QPS and Moranbah Mental Health Services concerning dealing with patients suffering mental health issues. QPS Contact: District Officer, Mackay – Ph: 49672266	Vol 1 Project Wide 3.3.9 Community Values and Change	To manage potential impacts on emergency services Adani will engage in ongoing consultations with the regional service providers to further investigate and monitor resourcing requirements. This includes investigating vehicles and staff requirements, through liaising with Queensland Police at a State and local level. This process will be supported through the formation of an Emergency Services Consultative Committee. Adani is has further committed to: • 1 x office • 2 x workstations • Access to a meeting room • 1 x vehicle • Accommodation at the village • Upgrade to existing communication towers for secure network. This would also accommodate other services such as QRFS and QAS. Also refer to Appendix D1 Section 8.9 and SIMP SEIS Volume 4 Appendix D1 Section 3.8. This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.3.11.
31	QPS	Social	SIMP - consultation	The QPS acknowledges the proponent's commitment to initial and ongoing consultation with emergency services, including QPS, in relation to emergency response planning. It is imperative the QPS is involved with the development of site emergency and evacuation plans and these plans are made available for the QPS. The QPS should be included in any consultation plan for emergency management, given QPS will take a lead role in any disaster management response, and the likelihood that QPS will be involved in any road accident response.	The QPS requests that the proponent formally engage with the QPS in the development of emergency response planning. QPS Contact: District Officer, Mackay – Ph: 49672266	Volume 1 Project Wide 4.5 Action Plans Emergency services planning and consultation	Adani is committed to ongoing consultations with QPS through the Emergency Services Consultative Committee. Also refer to Appendix D1 Section 8.9 and SIMP SEIS Volume 4 Appendix D1 Section 3.8. Adani will continue to work closely with QPS and other emergency service providers with regards to services and emergency responses (refer SEIS Volume 4 Appendix D1 Social Impact Assessment D2 Social Impact Management Plan)

31	QPS	Transport	Road impacts	The proponent acknowledges throughout the EIS the potential cumulative negative impacts on roads, traffic and safety. This is corroborated throughout the EIS, but particularly in Rail Chapters 11.4 – Summary of Traffic and Transport Assessment , when it is highlighted – 'The volume and intensity of truck movements will vary over the construction period. The worst case construction period was identified to generate approximately 50,910 trips per month or 1,697 daily trips.' '*Adani will consult with Department of Transport and Main Roads (DTMR) to establish how this should be managed and to identify mitigation measures.* *It is expected that other proponents will be having similar discussions which will enable DTMR to identify appropriate measures to mitigate cumulative road transport impacts.* ' The QPS should be involved in any consultation with regards to the management of mitigation measures to reduce the impact of potential road trauma.	The proponent should consult DTMR and the QPS to identify mitigation measures addressing the cumulative impacts to road, traffic and public safety. QPS Contact: District Officer, Mackay – Ph: 49672266	Volume 1 Project Wide 8.3.7 Traffic and Transport 8.3.7.1 Road	Adani will consult with DTMR and the QPS to identify mitigation measures addressing the cumulative impacts to road, traffic and public safety. These measures are to be incorporated into the revised traffic management plan for the project (Mine and Rail).
31	QPS	Hazard and Risk	Emergency Management	'An emergency management plan will be developed for all components of the Project and this will include response to injuries and medical evacuations as well as fire response and response to road accidents.	Include a requirement for the proponent to engage and consult with the QPS on a formal and periodic basis in the development of any emergency management plan. QPS Contact: District Officer, Mackay – Ph: 49672266	Volume 1 10.2 Project Wide Table 10-1 Volume 1 Section 3 Social Impact Assessment Section 3.3.8'.	Adani will engage and consult with QPS for the development of emergency management plans, as required.
31	QPS	Hazard and Risk	Emergency Management	'Provide medical, security and fire fighting services at the workers accommodation village to minimise additional pressure on emergency services and proactive engagement with emergency services in relation to emergency response planning along with provision of information required to allow forward planning by emergency services.' Any proactive engagement with the QPS is encouraged in regards to emergency response planning at the workers accommodation. It is particularly imperative that the proponent's security and the emergency response teams have ongoing relationships with the local Clermont Police and the District Disaster Officer.	The QPS should be a consultation stakeholder in any emergency response planning at the accommodation village, in areas pertaining to QPS service delivery. The QPS partner with the proponent organised training / awareness sessions for employees and security. This would generally be through ongoing relationships with the OIC Clermont Police. This will provide the proponent guidance on what issues require reporting to police, key points of contact with the police and procedures to be adopted prior to police arrival (ie: scene preservation and dealing with offender/victims). Proactive police strategies can be part of the policing response to the accommodation village. QPS Contact: District Officer, Mackay – Ph: 49672266	Volume 1, Table 10-2 Section 4 Social Impact Management Plan Commitment & Volume 2 Table 10-19 Section 12 Hazard	Adani will continue to engage and consult with QPS regarding emergency response planning at the Mine Workers Accommodation Village and other relevant areas and training/awareness programs.
31	QPS	Transport	Traffic management plan	A traffic management plan will be developed in consultation with DTMR and Council during the detailed design phase. Section 12.6.3 The QPS should be involved in any consultation with regards to developing a traffic management plan.	The QPS should be included as a key stakeholder for consultation in the development of the Traffic Management Plan (TMP) TMP is to include mitigating measures to acknowledge and address matters including but not limited to : - Over-dimensional vehicle movements - Significant increase in road use by heavy vehicles and the potential dangers and delays to the public. - Community engagement strategies, inclusive of awareness programs for transport contractors, project workforce and community. The QPS requires that the proponent address employee driver fatigue (inc: contractors, sub-contractors) within the TMP and inclusion of QPS as a key stakeholder. The TMP should include specific mitigation and management measures that identify the role of the QPS and the provision of resources for enforcement, training and other proactive activities, to be developed in partnership with QPS. QPS Contact: District Officer, Mackay – Ph: 49672266	Volume 3 Table 10-31 Section 12 Hazard and Risk	Adani will consult with QPS in the development of the revised traffic management plan for the project (Mine and Rail). and ensure this includes specific requirements in regards to the role of QPS.. Adani will continue to work closely with QPS and other emergency service providers with regards to services and emergency responses (refer SEIS Volume 4 Appendix D1 Social Impact Assessment D2 Social Impact Management Plan).
31	QPS	Social	Police resources	'Four temporary construction camps will be developed (three dedicated to Project (Rail) and one integrated at the mine), evenly spaced at less than 60 km apart as illustrated in Figure 2-10.' The rail camps will be in isolated locations and any calls for service will have a delayed response, and it is envisaged that this will further stretch the resources of the Clermont and Moranbah Police Divisions. The impending significant increase in traffic alone will require a significant policing presence to manage the potential of road trauma, through proactive patrolling and enforcement.	The requested increase in police and vehicles at Clermont will go some way to mitigate the impact on local police resources. The QPS believes that formal and regular engagement between the proponent's accommodation village management and QPS regarding worker offending issues will assist in minimising occurrences on site, provide the proponent with practical solutions to behaviour and offending issues resulting in positive outcomes. The QPS requests negotiations with it occur prior to the establishment of the camp. QPS Contact: District Officer, Mackay – Ph: 49672266	Volume 3 RAIL CHAPTERS 2.6.17 Temporary Construction Camps Camp Locations	Adani will undertake ongoing engagement with QPS for advice to manage security, behaviour and offending issues at the workers accommodation village, as stated in the updated SIA (SEIS Volume 4, Appendix D1, section 7.6) and updated SIMP (SEIS Volume 4, Appendix D2, section 3.4).
31	QPS	Transport	Traffic management plan	'The volume and intensity of truck movements will vary over the construction period. The worst case construction period was identified to generate approximately 50,910 trips per month or 1,697 daily trips. The analysis of the road network during this period indicates that the expected increase in traffic associated with the construction of the Project (Rail) can be adequately accommodated and does not impact the operating performance of the road network. It is also recognised that this impact is short term and occurs within a two year construction period.' The QPS acknowledges the proponent's strategies to reduce the impact on the roads, however the QPS does not agree it will not affect the operating performance of the road network. The EIS should consider a contribution to costs for road safety and enforcement, in addition to that for road maintenance and upgrades, to mitigate the impact of project traffic. The QPS will require additional resources for traffic enforcement activities, including: 1. remote speed cameras 2. increased traffic branch resources	The QPS requests formal engagement as a stakeholder in the review of the proponent's traffic, logistic and transport management plans. Regular engagement between applicable management and QPS in reviewing these plans is considered critical to community safety. The QPS believes that joint industry and agency engagement and partnerships is necessary to ensure the success of road safety and training projects for employees both on the job. The QPS suggests that Coordinator-General consider the proponent contribute financially to the costs for road safety and enforcement in both a preventative and enforcement standpoint. QPS Contact: District Officer, Mackay – Ph: 49672266	Volume 3 RAIL CHAPTERS 11.4 Summary of Traffic and Transport Assessment	Adani will consult with QPS in the development of the revised traffic management plan for the project (Mine and Rail). and ensure this includes specific requirements in regards to the role of QPS.. Adani will continue to work closely with QPS and other emergency service providers with regards to services and emergency responses (refer SEIS Volume 4 Appendices D1 and D2).

31	QPS	Hazard and Risk	Emergency Management	'An Emergency Response Team will be established to ensure trained and equipped personnel are available in the event of an incident. The team will consist of personnel trained in emergency response as well as volunteers from each operation shift and on-duty maintenance staff. Onsite emergency services will be stationed at each construction camp site as well as at the Mine during the operational phase and will be available and have the capacity to respond to Project (Rail) incidences.' In most cases the QPS is the lead agency in disaster and incident management. It is vital that QPS have a professional working relationship with an Emergency Response Team for the timely responses to emergencies. The QPS partnership with the Emergency Response Team will be vital to ensure a swift and professional response to any emergency. Input and training to Emergency Response Teams would come from various QPS stakeholders, including the Officer in Charge at Clermont and Moranbah, and the District Disaster Coordinator, Mackay.	The QPS requests ongoing input with the proponent in regards to the Emergency Response Teams through its inclusion in formal and periodic planning meetings and training.	Volume 3 RAIL CHAPTERS 12. Hazard and Risk 12.4.7 Emergency Response Team	Adani will engage and consult with QPS for the development of emergency management plans, as required.
31	QPS	Transport	Traffic management plan	'With much of the transport of equipment to site being via road, there is a high risk of damage to the road infrastructure, especially the local roads which are not designed for heavy and wide traffic. Disruption to traffic can be expected during construction as equipment and materials are transported to site, especially along the Gregory Developmental Road. Transport of materials associated with the rail construction will also have an impact on the road network with an increased number of heavy vehicles transporting equipment and supplies to various locations along the rail alignment.' The QPS acknowledges and concurs with the proponent's comments on the impacts to the roads. These issues will impact the public driving on these roads. QPS will need to significantly increase its presence in these areas to prevent road trauma through enforcement and visibility. It is expected that damaged rural roads, mixed with significant numbers of heavy vehicles, delays and driver fatigue will result in a greater potential for road fatalities.	As per previous suggested solutions : a) QPS involvement in all traffic related management plans. b) Coordinator-General condition for the proponent to contribute to increase policing resources as previously outlined.	Volume 4 MINE AND RAIL TECHNICAL REPORTS Social Impact Assessment 6.6 Roads, Traffic and Road Safety	Adani will consult with QPS in the development of the revised traffic management plan for the project (Mine and Rail). and ensure this includes specific requirements in regards to the role of QPS.. Adani will continue to work closely with QPS and other emergency service providers with regards to services and emergency responses (refer SEIS Volume 4 Appendix D1 Social Impact Assessment D2 Social Impact Management Plan).
31	QPS	Hazard and Risk	Emergency Management	The proponent should address the following security planning with QPS outside the public EIS process: 1. counter terrorist response 2. critical infrastructure 3. disaster management 4. incident management and response 5. issue motivated groups and intelligence capability development 6. management and security of airstrip (security risks).	The QPS recommends regular engagement between the proponent and QPS in regard to these matters is facilitated through formal meetings. QPS Contact: District Officer, Mackay – Ph: 49672266	Volume 4 MINE AND RAIL TECHNICAL REPORTS 7.9 Emergency Services Planning and Consultation	Adani will engage and consult with QPS for the development of emergency management plans, as required.
32	Coast and Country Association of QLD Inc	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Incorrect accounting of GHG emissions - The EIS purports to include all scope 1 emissions as defined by The Greenhouse Gas Protocol – A Corporate Accounting and Reporting Standard (2008, Revised edition) (the GHG Protocol) 1 as "Direct GHG emissions occur from sources that are owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment." Because the Project is premised on the proponent controlling the supply chain and burning the product coal in their power stations in India, the burning of the product coal would also fall within scope 1 emissions for the proponent under the GHG Protocol. The EIS fails to include these downstream scope 1 emissions. Coast and Country Association of Queensland Inc notes these emissions are relevant to the assessment of the CG because, for the reasons set out in Appendix A (Legislative Framework), the CG must also consider the indirect results of the activity under the EP Act.	Coast and Country Association of Queensland Inc request the CG require accounting for all downstream emissions created by the proponent in relation to the Project to be included with the revised EIS and form part of the CG assessment of this project.	Vol 2, sections 3 and 8	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
32	Coast and Country Association of QLD Inc	Greenhouse Gas Emissions	Greenhouse Gas Emissions	EIS fails to assess cumulative mine life emissions - As set out in Appendix B (Climate Science) - **refer to original submission for Appendix B**, carbon dioxide emissions accumulate in the atmosphere, making the total emissions over the life of the project more relevant than annual emissions. The EIS estimates Scope 2 and some Scope 1 emissions for the life of the project which total approximately 206 million tonnes CO2-e2 but neglects to estimate the downstream scope 1 emissions mentioned above. That is, those emissions the proponent will produce to meets its operations as outlined in the EIS and Executive Summary. The downstream scope 1 emissions are estimated to be 8.655 Billion tonnes CO2 over the life of the project using the methodology under the National Greenhouse and Energy Reporting Act 2007 (Cth) (NGER Act) and assuming a total output quantity of 4,772.1mt of product coal, an averaged energy content of 20.5625 GJ/tonne, and an emission factor of 88.2.5.	It is the view of Coast and Country Association of Queensland Inc the CG request changes to the EIS be made that are aligned to the values listed above, and to the deriving method of accounting, as the proponent's current EIS fails to identify several key elements of the science of climate change and relevant statutory framework and therefore does not present the emissions information in a way that is relevant to the task of the administering authority.	Vol 2, sections 3 and 8	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
32	Coast and Country Association of QLD Inc	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Therefore the total emissions including downstream scope 1 emissions are approximately 8.861 Billion tonnes CO2–e which, for comparison is: • More than 15 years' worth of Australia's current national emissions; and • 1.38% of the remaining global emissions budget to give a 75% chance of staying below a scenario of 2^{o}C warming.	(as above)		See the above response.

32	Coast and Country Association of QLD Inc	Introduction	Relevant Legislation and Project Approvals	EIS fails to comply with Qld Legislative Framework and resilience of receiving environment - For the reasons set out in Appendix A (Legislative Framework) - **refer to original submission for Appendix A** - the CG is required to consider the "character, resilience and values of the receiving environment" before imposing conditions under the Environmental Protection Act 1994 (Qld) (EP Act). The EIS fails to consider the resilience of the atmosphere to further emissions.	Coast and Country Association of Queensland Inc would like to advise the CG the proponents EIS fails to provide this information and therefore does not provide sufficient information to allow the CG to properly consider the environmental harm proposed to be authorised.	Vol 1, section 1.9	Noted. Scope 3 emissions not within the scope of the Project ToR.
32	Coast and Country Association of QLD Inc	Introduction	Relevant Legislation and Project Approvals	Under the Queensland legislative framework supporting the CG assessment the Project, the EIS should: • describe the character, resilience and values of the receiving environment in particular the fact that the resilience of the environment to further emissions is already exceeded and approaching a critical threshold of 2^{o}C; • describe the cumulative quantity of direct and indirect emissions expected over the life of the project proposed to be authorised; • describe the significance of the cumulative direct and indirect emissions by reference to the resilience of the environment and contribution to exceeding the critical threshold of 2^{o}C; • describe the cumulative impacts of the activity and all other activities on the environment through climate change; and • describe the proportional contribution of the cumulative emissions from the project to the cumulative impacts of climate change.	Under the circumstances and inadequateness listed above the Coast and Country Association of Queensland Inc request the CG does not provide Queensland Government support or seek approval of the Project. The EIS fails to identify key requirements of the Queensland legislative framework and consequently fails to present emissions data in a way that enables an assessment under that framework. Supporting its position the CG should utilise internationally agreed Climate Science (as discussed in Appendix B) and recognise the atmosphere has already exceeded safe levels of carbon dioxide and is fast approaching the critical threshold of 2^{o}C warming.	Vol 1, section 1.9	Noted. Scope 3 emissions not within the scope of the Project ToR.
32	Coast and Country Association of QLD Inc	Introduction	Relevant Legislation and Project Approvals	In considering the environmental effects of the project the CG should elect to not provide carriage for the Projects approval. The CG may elect to state conditions for the draft environmental authority (EA) under the Environmental Protection Act 1994 (EP Act). For the conditions to be under the EP Act they must be imposed within the jurisdiction of that Act. Accordingly the assessment by the CG of environmental effects relevant to the EP Act should consider, amongst other things: a) the standard criteria,9 relevantly including: (i) the principles of ecologically sustainable development as set out in the 'National Strategy for Ecologically Sustainable Development'; and (ii) the character, resilience and values of the receiving environment. b) the environmental harm authorised by the environmental authority, which is "any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value", and c) the obligation to advance the purpose of the EP Act.	These statutory provisions guide the information which the EIS should provide to enable the CG to exercise their function under the SDPWO Act.	Vol 1, section 1.9	Comment noted.
32	Coast and Country Association of QLD Inc	Climate, Natural Hazards and Climate Change	Climate change impacts	EIS fails to assess cumulative impact of emissions - For the reasons set out Appendix A (Legislative Framework) -**refer to original submission for Appendix A** - the CG must consider the environmental harm caused by the Project "*whether the harm results from the activity alone or from the combined effects of the activity and other activities or factors*". Yet the EIS fails to consider the cumulative impacts of climate change or the contribution of the proposed Project to climate change.	Coast and Country Association of Queensland Inc request the CG performs as full economic analysis of the Projects projected environmental harm and impact to the Queensland economy over the life of the mine Project using the highlighted emissions data outlined within this submission, and that of a revised EIS by the proponent based on requests of this submission. Additionally the Coast and Country Association of Queensland Inc request the CG to seek information from the proponent in the form of an updated EIS that outlines the full scope of social and environmental, and climate change impacts from the Project using properly accounted emission and their accumulated impacts.	Volumes 2 and 3, sections 3 and 8	Noted. Scope 3 GHG emissions are not included in government requirements or the TOR
32	Coast and Country Association of QLD Inc	Economics	Climate change impacts	Preliminary analysis indicates that the Project is likely to result in a measurable increase in global temperatures and sea levels. It will also contribute to the loss of the Great Barrier Reef which contributed an estimated $5.4 billion to Australia's economy in 2006-07, and provided full time employment for approximately 53,800 people in Australia. The global cost of the contribution of the project to climate change is approximately $70 billion. These external costs due to climate change are not accounted for in the EIS.	Coast and Country Association of Queensland Inc request the CG performs as full economic analysis of the Projects projected environmental harm and impact to the Queensland economy over the life of the mine Project using the highlighted emissions data outlined within this submission, and that of a revised EIS by the proponent based on requests of this submission. Additionally the Coast and Country Association of Queensland Inc request the CG to seek information from the proponent in the form of an updated EIS that outlines the full scope of social and environmental, and climate change impacts from the Project using properly accounted emission and their accumulated impacts.	Volume 1, section 6 Volumes 2 and 3, sections 3 and 8	Noted. Scope 3 GHG emissions are not included in government requirements or the TOR
32	Coast and Country Association of QLD Inc	Introduction	Alternatives to the Project	EIS fails to identify feasible alternatives - The Project relies on data from the World Energy Outlook report of 2008, and appears to ignore more recent developments. In particular solar photovoltaics are expected to become cheaper than coal in India in 2017.	In considering this Projects alternatives and impact to Queensland, the CG should recognise the Australian Government Energy White Paper and its projected limit lifespan for coal deduced energy. The Country Association of Queensland Inc request the CG to review relevant policy, positions and research (including the Australian Government Energy White Paper, Australian Government Clean Energy Plan and modelling reports, and the proponents referenced World Energy Outlook report of 2008) when assessing alternatives against the Projects proposed 90 year life span, its projected job and returning royalties to Queensland.	Vol 1, section 1.5	Noted
32	Coast and Country Association of QLD Inc	Economics	Climate change impacts	Without due reference to market forecasts and energy source modelling the EIS provides limited scope for alternatives to the Project and its 90 year life span. Thus the EIS provides limit scope to the CG to assess the Projects need. Yet when reviewed against accepted modelling, as noted in the short list of publications above, there is not sufficient need for this Project to justify the environmental impacts from climate change outlined above.	The Country Association of Queensland Inc request the CG considers the loss of impacted and cleared vegetation and its valuable contribution to carbon sequestration and projection against climate change.	Volume 1, section 6 Volumes 2 and 3, sections 3 and 8	To be noted

32	Coast and Country Association of QLD Inc	Nature conservation	Vegetation Clearing	EIS destroys wildlife habitat - the proponent has stated "*remnant vegetation occurs over approximately 60 per cent of the Project Area*", including areas currently covered by Nature Reserve protected by Queensland Government legislation. The Country Association of Queensland Inc note the EIS was not able to clearly identify the total amount of cleared vegetation for simple community understanding. The EIS reports "*10,609 ha of the 21,801 ha of identified as potential habitat for the koala*" to be cleared for the Project.	The Country Association of Queensland Inc note the Koala populations are in steep decline and request all land valued as koala habitat be excluded from the Project application and from all forms of mining and associated mining activities.	Volume 2, Section 5 Volume 4, App N1	Opinion noted.
32	Coast and Country Association of QLD Inc	Water Resources	Groundwater	The EIS does not provide protection to Queensland valuable water resources, including those in and around the project area. The EIS notes localised water systems to be ephemeral and the Project has the potential to impact on the surrounding water resources, including: • Doongmabulla springs; • listed Important Wetlands; and • various registered bores. This includes an additional "*31 of the 36 licensed and other registered bores, outside of the lease area*", and reported losses of 1m water depth for a 10km radius of the Project.	The Country Association of Queensland Inc request the Project EIS and mine not be approved based on the water resource drawdown impacts to the sensitive Great Artesian Basin Doongmabulla Spring complex, and accumulated mine toxins entering the Carmichael River through proposed groundwater discharge to the Carmichael River.	Volume 2, Section 6 Volume 4, App R	Comments are noted
32	Coast and Country Association of QLD Inc	General comment	Consultation	Thank you for the opportunity to provide comment to the Carmichael Coal Mine and Rail Project EIS. Coast and Country Association of Queensland Inc is a community group working for the protection and improvement of Queensland's natural resources and natural environment. In making this submission we make a final request, and that is to be kept informed about the Project and EIS development and our recommended changes.		n/a	Noted
33	DCS - Corporate Service (Policy)	Hazard and Risk	Emergency Management	Mine Infrastructure The EIS identifies that the Project will provide emergency response equipment including a fire station and ambulance as well as mine rescue equipment during construction and operation.	It is suggested that the establishment of the emergency response facility be undertaken in consultation with the Department of Community Safety to ensure that the Project would address the natural disaster risk management requirements of the SPP 1/03, including liaison with the Queensland Fire and Rescue Service (QFRS) and Queensland Ambulance Service.	Vol 2, sections 2.7.1 and 12	Adani will consult with DCS for the establishment of emergency response facility.
33	DCS - Corporate Service (Policy)	EMP - Mine and Rail	EMP	Environmental Management Plan (Mine / Rail) The EMP (Mine / Rail) provides a framework for an environmental management plan for potential impacts in regards to the Project (Rail) during construction and operation. The environmental management plan is a draft and will be refined during Project planning and as design progresses. A final environmental management plan will need to incorporate conditions applied to the project through the EIS approval process.	It is recommended that the EMP for the mine and rail infrastructure add additional mitigation measures that ensure adequate access for fire fighting/other emergency vehicles and safe evacuation is provided for during construction and maintenance in the project area. Approval of the Construction and Operational EMPs for the mine and rail infrastructure should be undertaken by the Department of Community Safety to ensure adequate mitigation measures to address natural hazards management, particularly flooding as the flood investigations are in progress.	Volume 2 sections 13 and 14; volume 3 section 13	Noted. The EMP is the management document for key environmental risks. Issues associated with access will be managed through project Traffic Management Plans and Emergency Management Plans. The EMP makes note of these plans where relevant. The EMP provide management and mitigation of key project hazards and risks including where required, natural hazards. The revised EMPs can be found under Volume 4 of the SEIS. A commitment to provide adequate access for fire fighting/other emergency vehicles is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.2.11 and 2.3.11.
33	DCS - Corporate Service (Policy)	Transport	Road impacts	Road - The construction of level crossings along the route may result in potential conflicts between rail and road traffic that will need to be managed by the installation of appropriate safety warning measures. These level crossings may result in delays to emergency services, school bus routes, stock movements (vehicle and foot), and local traffic.	It is recommended that the EMP for the mine and rail infrastructure add additional mitigation measures that ensure adequate access for fire fighting/other emergency vehicles and safe evacuation is provided for during construction and maintenance in the project area	Volumes 2 and 3, section 11 8.3.7.1 (vol 1); Volume 2 sections 13 and 14; volume 3 section 13	Comments regarding safe access for vehicles during construction of level crossings have been noted. Mitigation and management measures that ensure adequate access for emergency vehicles and safe evacuation is provided for during construction and maintenance in the project area will be addressed within the construction and operation EMPs for the Mine and Rail. This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.2.11 and 2.3.11.
33	DCS - Corporate Service (Policy)	Hazard and Risk	Hazardous Substances	Hazardous Substances - EIS does not address specific measures to ensure the environment is not adversely affected by the detrimental impacts of certain hazardous substances during flood events.	Volumes 2 and 3, Sections 12.2.3 to be amended to address specific measures that address potential impacts associated with certain hazardous substances during flood events. FLOODING – State Planning Policy 1/03: Mitigating the adverse impacts of flood, bushfire and landslide (SPP 1/03)	Volumes 2 and 3, section 12.2.3	Please refer to Table 13-38 Flood Design Criteria in the EIS Volume 2 - Chapter 13 EMP - Mine, which specifies that diesel storage and other hazardous chemical storage will be designed for 100 year ARI. Section 13.22.5 provides further detail on controls for hazardous waste.
33	DCS - Corporate Service (Policy)	Hazard and Risk	Public health and safety	Wastewater Management (mine) - waste water from each temporary construction camp will be treated on site using portable treatment plants. A Sewage Treatment Plant (STP) will be constructed and operated on-site to treat sewage from the maintenance yard. Package STP's will also be provided at the temporary construction camps and the flash butt welding yard. The STP's will be operated and managed in accordance with operational procedures. Spillages and unplanned events will be managed in accordance with emergency response procedures. Wastewater Management (rail) - Potential hazards associated with wastewater management arise from: - Failure of the wastewater treatment plant resulting in production of untreated or partially treated water. - Failure of pumps or pipelines resulting in releases of untreated wastewater.	Volumes 2 and 3, Sections 12.2.2.5 do not provide any specific measures to ensure the environment is not adversely affected by the detrimental impacts of floodwater on sewage waste. Particularly in terms of ensuring that the sewage infrastructure function during a DFE. For example, placement of infrastructure in areas with a low risk of being affected by flooding (i.e. placement of infrastructure in areas with a low risk of being affected by flooding).	Vol 2, section 12.2.2.5 Vol 3, section 12.2.2.2	Please refer to updated EMPs in Volume 4 Section Q1 EMP (Mine), Q2 EMP (Offsite) and W EMP (Rail). Reference to Assessment guideline for ERA 63 in Table 9-3 has been included as well as control strategies in Table 12-3 of the EMP (Mine). Table 11-2 of Section 11.4.1 of the EMP (Rail) has been updated as well as Table 11-3 in Section 11.5.2 of the EMP (Offsite).
33	DCS - Corporate Service (Policy)	Hazard and Risk	Public health and safety	Mitigation: - Mitigation will largely be through surveillance and maintenance of the wastewater treatment plants to check that these are operating correctly. This will include monitoring of treated wastewater for nutrients and pathogens. The package treatment plants will need to include alarm systems to indicate malfunctions. - Workers accessing irrigation areas and workers using treated wastewater for vehicle washing will be required to wear personal protective equipment including skin covering. - routine monitoring of soils in irrigation areas will also detect any build-up of nutrients that might lead to mobilisation of contaminants off-site	see above	Vol 2, section 12.2.2.5 Vol 3, section 12.2.2.2	See the above response.

33	DCS - Corporate Service (Policy)	EMP - Mine	General comment	Environmental Management Plan (Mine) Section 13.2.1: The channel and riparian zone of the Carmichael River will be preserved and the adjacent pits protected from flooding events by a levee. Table 13.36 Potential Environmental Impacts (Construction): Mining activities within a floodplain: flooding of mine workings and subsequent generation of large volumes of flood affected waters Structures within a flood plain: increased afflux and flooding extent and duration upstream and reduced flood flows downstream Storage and handling of hydrocarbons and other environmentally hazardous materials: Contamination of surface water resources Table 13.37 Surface water – Design, Procurement and Preconstruction Controls: Design all structures to meet the flood design criteria set out in Table 13-38 or other criteria as determined by detailed design and risk assessment Table 13.38 details the flood design criteria for various mine infrastructure	Achieving compliance with flood design criteria contained in Table 13.38 would be acceptable. However, where emergency services are located on site, the Appendix 9 of the Guideline to the SPP1/03 recommends that they meet 0.2% AEP, while emergency shelters are located at 0.5% AEP. Further confirmation of potential upstream flooding impacts on properties to be provided detailing the safety of people and property.	Vol 2, sections 13	Noted. The submission raised on the EMP is actually more relevant to the impact assessment findings in the EIS and SEIS and for detailed project design. The EMP is a proposed management document and therefore did not contain this information. Finalisation of project design will consider all relevant flood protection requirements for all project aspects. Please refer to SEIS Volume 4 Appendix S1 for the Revised Rail Flood Modelling Report.
33	DCS - Corporate Service (Policy)	Water resources	Flooding	Rail Hydrology Report - The EIS confirms that the rail infrastructure will be designed to withstand a 100 year ARI flood immunity. - The afflux results are detailed in Section 3 - The report confirms potentially greater flood impacts to upstream properties. Mitigation measures include adopting bridge and culvert sizes (length in the rail direction) that limit the afflux to acceptable and practical levels and preparing a catalogue of the floodplain assets and the afflux for each asset with a view to demonstrating that the effects are acceptable - The detailed design will be undertaken for the works and supported by more detailed flood modelling for the rail project and opening/crossing design and lengths. The EIS confirms it is an ongoing process Construction phase (section 4.4): - Temporary waterway barrier works (e.g. bridge/causeways over the channel as a construction platform) are proposed during construction. The EIS states that the causeways would be built to low flood immunity however the works are likely to increase the flood level and extent in the area.	Achieving a 100 year ARI flood immunity is considered acceptable for the rail infrastructure. Development should however avoid increased flood impacts on upstream properties. The proponent should confirm that the proposed temporary and permanent flood mitigation strategies detailed in the EMP for the rail works will maintain the safety of site occupants (i.e. the on-site workforce) from all floods up to and including a defined flood event (1 in 100 year ARI), in accordance with SPP 1/03 Guideline/Appendix 5A/Flood and in accordance with Outcome 2 of the SPP 1/03. To confirm whether the extent of flood impacts and proposed mitigation strategies as detailed design is developed, it is recommended that the Department of Community Safety be consulted once additional flooding investigations are undertaken. For example, further knowledge regarding the impacts associated with the mitigation strategy to place fill within the flood plain to raise farm roads.	Appendix AB, 3.5, 4.4, 5.4	An updated Rail Flooding Report is provided in the SEIS under Volume 4 Section S1.Flooding impacts are consistent with those described in the EIS and avoidance, mitigation and design measures have been identified and presented to prevent or minimise flooding impacts associated with the Rail. Residual flooding impacts have also been assessed and presented and ongoing consultation with landholders will continue in regards to specific impacts and specific mitigation measures required for each affected property. Further interpretation of the impact of flooding on properties and consultation with landholders is provided in SEIS Volume 3, Rail studies, Section 4.3.8.
33	DCS - Corporate Service (Policy)	Water resources	Flooding	Operational phase (Section 5.4): - Section 5.4.1 details that: It is noted that the Project (Rail) concept design considers a range of crossing openings (i.e. bridge lengths and/or culvert widths). As such, the magnitude of the afflux was not defined at that stage. It is considered however that while afflux will be unavoidable, predicted flood levels upstream of bridges and drainage structures will be assessed throughout the detailed design phase such that no existing buildings, structures or other infrastructure will be adversely affected by increased flood levels as a result of the Project (Rail).	see above	Appendix AB, 3.5, 4.4, 5.4	The magnitude of afflux was presented in the EIS (refer to Volume 3 Section 6 and Volume 4 Appendix AB). An updated flood report is presented in the SEIS Volume 4 Appendix S1. Further interpretation of the impact of flooding on properties and consultation with landholders is provided in SEIS Volume 3, Rail studies, Section 4.3.8.
33	DCS - Corporate Service (Policy)	Water resources	Flooding	The mitigation measures proposed in the EIS highlight a number of strategies including: - Ongoing flood modelling as part of the detailed design process to determine the afflux values associated the design of the bridge and culvert crossings - Further work will be undertaken to catalogue the impacts of afflux on the floodplain, properties, assets and infrastructure - Selectively raising farm roads, by placing fill material, will reduce the impact on farm roads subject to negotiations and agreements with landholders and asset owners - Consideration of compensation to flood affected land and asset owners in relation to excessive afflux.	see above	Appendix AB, 3.5, 4.4, 5.4	The magnitude of afflux was presented in the EIS (refer to Volume 3 Section 6 and Volume 4 Appendix AB). An updated flood report is presented in the SEIS Volume 4 Appendix S1.
33	DCS - Corporate Service (Policy)	Water resources	Flooding	Mine Hydrology Reports Section 2.3.1 details the methodology for flood modelling undertaken for the mine. Modelling is based on 12 months of monitoring data, which provides a relatively limited data set on water levels and flow. Levee banks are proposed in various locations to reduce the risk of flood waters entering pits Section 6.2.1 details that the levee banks will be constructed in various locations to assist with the separation of mine affected areas. These controls will reduce the amount of mine affected water. It is expected that local stormwater runoff and flood water from the Carmichael River will not enter the open cut pits and create environmental hazard Design criteria have been established for diversion drains required to redirect surface water away from mine affected areas. The purpose of these diversion drains is to both provide flood immunity to the site and to minimise the volume of mine-affected water requiring treatment before discharge. They comprise of internal and external diversion drains. They will be constructed to accommodate the 100 year ARI flow with an additional 600 mm freeboard; no allowance for climate change.	The flood afflux results appear to be suitable where mitigation measures are identified for the development; however to confirm whether the extent of flood impacts and proposed mitigation strategies as detailed design is developed, it is recommended that the Department of Community Safety be consulted once additional flooding investigations are undertaken.	Appendix P1	The magnitude of afflux was presented in the EIS (refer to Volume 3 Section 6 and Volume 4 Appendix AB). An updated flood report is presented in the SEIS Volume 4 Appendix S1. Consultation will be ongoing with agencies and affected landowners. Further interpretation of the impact of flooding on properties and consultation with landholders is provided in SEIS Volume 3, Rail studies, Section 4.3.8. Adani will engage with DCS throughout the life of the Project. This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.2.11 and 2.3.11.

33	DCS - Corporate Service (Policy)	Water resources	Flooding	Section 6.4.1 confirms the following design criteria: that the 50 year ARI flood immunity for the haul road and conveyor crossing, with 600 mm freeboard for the haul road Section 8.4.5 of the hydrology report details that with the establishment of the Mine site and accompanying flood mitigation infrastructure, the Carmichael River is now confined to the corridor between the flood levees with no runoff being received from the area internal to the Study Area. The contraction of the floodplain causes an insignificant increase in flood extent upstream of the MLA for any of the simulated flood events. This outcome reflects the relative distance of the contraction from the western MLA boundary. The proposed levees successfully prevent flooding of either the underground mining area or the open cut pit areas. The Carmichael River (haul road) bridge is immune to the 10 year or 50 year ARI events, but is overtopped by the 100 year and 1,000 year events. As discussed elsewhere the velocity through the bridge is high, leading to a potentially substantial risk of scour in floods larger than the 50 year ARI event.	(refer 1st cell of comment 33H)	Appendix P1	More detailed modelling is required in the future. Noted. The magnitude of afflux was presented in the EIS (refer to Volume 3 Section 6 and Volume 4 Appendix AB). An updated flood report is presented in the SEIS Volume 4 Appendix S1. Consultation will be ongoing with agencies and affected landowners. Further interpretation of the impact of flooding on properties and consultation with landholders is provided in SEIS Volume 3, Rail studies, Section 4.3.8. Adani will engage with DCS throughout the life of the Project. This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.2.11 and 2.3.11.
33	DCS - Corporate Service (Policy)	Water resources	Flooding	Construction phase: Section 7.1 confirms that key construction activities associated with this work include the use of construction vehicles and machinery, storage of materials, bulk earthworks and works within or next to existing watercourses. Section 7.2 details that the watercourses located adjacent to the proposed construction works are ephemeral and relatively small in size. Effects of any change to surface water flows within these creeks are therefore likely to be confined to the local vicinity. Furthermore, given the relatively small area of catchments to be disturbed during construction, it is unlikely that any loss of catchment area will substantially change runoff flow volumes. Notwithstanding this, mitigation measures to avoid and minimise potential impacts on surface water flows are recommended in the following sections. Detailed design is to be undertaken for the mine and will include flood immunity	(refer 1st cell of comment 33H)	Appendix P1	Comments are noted (refer to Appendix K5 Revised Mine Hydrology Impact Assessment Report)
33	DCS - Corporate Service (Policy)	Hazard and Risk	Hazard and Risk	Hazard Analysis and Risk Assessment No specific risks identified due to landslide. LANDSLIP – State Planning Policy 1/03: Mitigating the adverse impacts of flood, bushfire and landslide (SPP 1/03)	Recommend incorporation of landslide risk into Hazard Analysis and Evaluation section (Table 12-7). Ensure specific response measures are included in emergency response and environmental management plans/procedures given the construction requirements for establishing the mine infrastructure and open pits. This should include measures designed to maintain the safety of people, property and hazardous materials manufactured or stored in bulk from the risk of landslide.	Volume 2, 12.2.5	Please refer to Updated EMP- Mine in SEIS Volume 4 -Appendix Q1 for reference on risk of landslide, Section 23.1, Table 23-1.
33	DCS - Corporate Service (Policy)	Hazard and Risk	Hazard and Risk	EIS does not sufficiently detail the development of firebreaks that provide adequate setbacks between buildings/structures or hazardous vegetation. EIS also does not detail the requirement for firebreaks into design to ensure access for emergency services BUSHFIRE– State Planning Policy 1/03: Mitigating the adverse impacts of flood, bushfire and landslide (SPP 1/03)	It is recommended that firebreaks be incorporated into Hazard mitigation plans/design in consultation with the Department of Community Safety.	Volume 2, 12.3.3	Adani has developed a Rail Safety Procedure (AD-RSM-PRO-022.5, April 2013) to address the risk of Bushfires, please refer to SEIS Volume 4, Appendix S2 for a copy of the procedure. Adani will develop an Emergency Management Plan for mining activities prior to the commencement of activities in consultation with DCS. Please refer to Updated EMP- Mine in Volume 4 -Appendix Q1. This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Sections 2.2.2 and 2.3.2.
33	DCS QFRS - Major Development Unit	Hazard and Risk	Hazard and Risk	The Queensland Fire and Rescue Service (QFRS) maintains several prescribed functions under the Fire and Rescue Service Act 1990, one of which is to provide an advisory service and undertake other measures to promote fire prevention, fire control and safety and other procedures if a fire or hazardous materials emergency occurs. As an advice agency we also have jurisdiction to provide input into the design of a building or structures fire safety systems. This advice must be in accordance with the Sustainable Planning Regulation 2009 – schedule 7, table 1, for building work assessable against the Building Act 1975. The QFRS is aware of the regulatory requirements outlined for approvals in volume 4, appendix D - Project approvals and planning assessment. We understand the objective of this document and we acknowledge our role in the consultation process. We remain aware that we may provide the proponent with advice relevant to our jurisdiction and function.	QFRS note the proponent will comply where necessary with relevant Queensland statutory legislation and will implement safety and health management systems so as to mitigate hazard and risk as per chapter 12 - Hazard and Risk (Mine and Rail). QFRS also note the following: • Implementation of emergency response plans detailing mitigation strategies to achieve specific outcomes as outlined in the State Planning Policy (SPP) 1/03 – Guideline for Mitigating the Adverse Impacts of Flood, Bushfire and Landslide; Also ensure adequate separation of vegetation from exposures to prevent wild fire events threatening infrastructure in isolated areas. • Hazard analysis and risk assessment undertaken in accordance with AS/NZS ISO 31000:2009 Risk Management – Principles and guidelines and HB203:2006 Environmental Risk Management Principles and Processes;	Volumes 2 and 3, section 12	Adani has developed a Rail Safety Procedure (AD-RSM-PRO-022.5, April 2013) to address the risk of Bushfires, please refer to Appendix S2 for a copy of the procedure. Adani will develop an Emergency Management Plan for mining activities prior to the commencement of activities in consolation with QFRS.
33	DCS QFRS - Major Development Unit	Hazard and Risk	Hazard and Risk		• All dangerous goods, explosives and hazardous substances transported, stored and handled in accordance with relevant legislation; • Development of safety management plans and emergency response procedures in consultation with state and regional emergency service providers and provide an adequate level of training to staff who will be tasked with emergency management activities; • Compliance where necessary with the Fire and Rescue Service Act 1990.	Volumes 2 and 3, section 12	See the above response.
33	DCS QFRS - Central Region	Transport	Emergency Management	Response by QFRS to an emergency incident on or off the Carmichael Coal Mine (CCM) lease. Due to the increased road traffic both heavy and light vehicles, there is potential for increased road crashes. The increased road traffic also has the potential to increase response times of personnel and equipment to any emergency requiring QFRS attendance. The closest QFRS urban fire station is at Clermont, approximately 200km distant.	The EIS Traffic Management Plan should address this and identify management and mitigation procedures.	Volumes 2 and 3, sections 11 and 12	Comments regarding response times of QFRS to an emergency incident are noted. Management and mitigation procedures outlining emergency response times for emergency vehicles will included be included within the revised traffic management plan for the project (Mine and Rail). This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.2.10 and 2.3.10.
33	DCS QFRS - Central Region	Hazard and Risk	Emergency Management	QFRS acknowledges the planned workers camps/villages both at the mine lease (approximately 15km east of the mine) and along the rail corridor. The accommodation areas are required to have Emergency Management Plans to deal with any incident or hazardous situation that may occur.	Information should be provided to QFRS on these camp/villages. The QFRS will be required to be involved in the approval process as a referral agency under the Sustainable Planning Act 2009 and Sustainable Planning Regulations 2009, Schedule 7.	Volumes 2 and 3, section 12	Adani will ensure that Emergency Response capabilities are established during the construction and operation phases to address these foreseeable risks.

33	DCS QFRS - Central Region	Hazard and Risk	Emergency Management	QFRS acknowledges EIS – Hazard Analysis and Evaluations. Due to the distance (200km) from QFRS urban support, the emergency response team (ERT) must be sufficiently trained and be equipped with adequate PPE and equipment to be self sufficient with any emergency until QFRS backup arrives (approximately 2.5 hours).	When the proponent is in the process of establishing the ERT, QFRS recommends consultation occur to form a collaborative agreement where both Carmichael Coal and QFRS work together in a unified approach to deal with emergency incidents, both on and off the mining lease or rail corridor. This will also enable terminology and equipment to be compatible with QFRS and meet operational capabilities.	Volume 2, section 12	Adani will consult with QFRS during the process of establishing the Emergency response team.
33	DCS QFRS - Central Region	Hazard and Risk	Emergency Management	QFRS acknowledges EIS – Hazard Analysis and Evaluations, in particular the potential for an aircraft crash or emergency incident at the on-site airport. A dedicated fire and rescue appliance and ERT should be on site to be self sufficient and prepared for any potential aircraft incident.	QFRS recommends and requests inclusion in extensive consultation and planning in developing both the Aircraft Emergency Management Plan and Emergency Response Plan for the airport.	Volume 2, section 12	Adani will consult and engage with QFRS in the development of both the Aircraft Emergency Management Plan and Emergency Response Plan for the airport.
33	DCS QFRS - Central Region	Hazard and Risk	Emergency Management	QFRS acknowledges EIS – Hazard Analysis and Evaluations in particular the potential for a rail emergency incident.	QFRS recommends and requests inclusion in extensive consultation and planning in developing both the Rail Emergency Management Plan and Emergency Response Plan for the Rail Project.	Volume 2, section 12	Adani will consult and engage with QFRS in the development of Rail Emergency Management Plan and Emergency Response Plan.
33	DCS - QAS	Introduction	Consultation	Consultation with Queensland Ambulance Service (QAS) to ensure preparedness in workforce and operational planning.	o Provide meeting advice to QAS once a consultative working group commences.	Vol 1, section, 1.8 Public consultation process	Comments are noted.
33	DCS - QAS	Social	Demand on QAS resources	A requirement for QAS might exist to fund and expand radio networks in the area.	o The QAS would request support to piggy back communication technology on planned towers or investigate assisting QAS to install appropriate technology in the area.	Vol 1 Project Wide 3.3.8 Capacity of Social Services and Infrastructure	Adani is committed to upgrade existing communication towers for secure network. This would also accommodate other services such as QRFS and QAS. This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Section 2.3.11.
33	DCS - QAS	Transport	Road impacts	Any diversions, restrictions, limitations on road infrastructure that may impact on the delivery of ambulance operations from ambulance stations through road network locations within the project area.	o This should outline alternatives to road transport for the delivery of equipment.	Volume 2, section 11	Comments regarding response times of QFRS to an emergency incident are noted. Management and mitigation procedures outlining emergency response times for emergency vehicles will included be included within the revised traffic management plan for the project (Mine and Rail).
33	DCS - QAS	Social	Housing and health services	• Relative impact on community health and infrastructure. • Availability of accommodation and affordability.	o Identify the impact on the surrounding community health and services infrastructure, should the project result in a significant increase in population. o Identify management strategies to address the consequences of limited accommodation availability and affordability, the impact for local residents including emergency service personnel in securing suitable accommodation at a reasonable cost. o Identify viable housing initiatives and commitments that the project can assist the local community, low income earners and critical workers with residential housing availability and affordability factors, should the project result in a significant increase in the construction workforce.	Vol 1 Project Wide 3.3.8 Capacity of Social Services and Infrastructure	Overall, the Project is not expected to significantly increase the population of the communities located closest to the Project site as all construction workers will be housed in purpose built accommodation villages. Although some population growth may occur in Clermont as a result of the increased economic activity that the Project will bring, it is anticipated that this will be in line with OESR population projections. As a result the construction and operation activities of the Project are not expected to exacerbate existing issues in relation to social services and infrastructure, particularly housing. Adani understands that should the population increase significantly, there could be impacts on the local housing market and possible local services. Therefore Adani is committed to continuing to work with the IRC, service providers and the Clermont Preferred Futures Group to monitor population and demographic changes in Clermont and develop responses, as required, to address any emerging social issues. Although Adani will develop an emergency management plan for all components of the project, it is likely that local fire, police and ambulance services may also be required to respond, particularly to accidents on access roads, large fires or in the event of a suspected crime, Adani will continue to consult with emergency service providers to ensure that responses can be coordinated and impacts on emergency service providers minimised. To manage workforce health and wellbeing, counselling and support services will be available at the accommodation facilities. This further reduces the potential for the Project to impact upon service providers in Clermont and other population centres. Refer to SIA (SEIS Volume 4, Appendix D1, Sections 8.6, 8.8, 8.9) and SIMP (SEIS Volume 4, Appendix D2, Sections 3.4 and 3.8).
33	DCS - QAS	Hazard and Risk	Public health and safety	The presence of paramedic services on site.	o Consult with QAS in relation to provision of a paramedic service on the site. This paramedic will work closely with your health team to ensure loss time is reduced where possible.	Vol 2, section 12	Adani will involve QAS in consultative working group, once established.
33	DCS - QAS	Hazard and Risk	Emergency Management	QAS knowledge of and Emergency Management preparedness for Major Incidents.	o Consult with the Queensland Chemical Hazards & Emergency Management and the Medical Director of the Queensland Ambulance service in relation to treatment plans for injured workers due to chemical processes used on site. o Formulate and provide a copy of the Major Emergency Incident Plan, which should include contact details for key stakeholders in case of an emergency. o Notification of planned exercises, either practical or tabletop, for attendance and participation by the QAS. o Provide QAS with information relating to the Disaster Management Systems that will be used in the event of a disaster. o Provide QAS with the access and evacuation maps for accommodation camps or villages.	Volumes 2 and 3, section 12	Adani will liaise with QAS in relation to development of treatment plans for injured workers, disaster management and access and evacuation procedures, as required.
34	Hoch and Wilkinson Livestock and Property Pty Ltd	Social	Workforce profile	NOMINATED COLLECTION POINTS ON THE EAST COAST At several places in the EIS, reference is made to collection points along the east coast, or outside the regional area.	CLERMONT TO BE A NOMINATED COLLECTION POINT The social impact assessment was done prior to the closure of Rio Tinto's Blair Athol coal mine, and prior to the cutbacks announced across the coal mining industry. Consequently, there has been a significant increase in the number of experienced miners unemployed. Many of these people live in Clermont or Moranbah. Moranbah has significant housing issues because of encroaching legislated mining buffer zones, and reliance on heavy density housing. Consequently, there has been a decline in the number of families willing to reside in Moranbah and an increase in the reliance of FIFO at the expense of families and the community.	Vol 1, sections 3 and 4 Social Impact Assessment 3.3.2 - Project Workforce Profile	Comments are noted. Optimal collection points will be determined after full consideration to skilled workforce availability in the immediate vicinity of airports, airport capacity and flight schedule performance, surrounding infrastructure such as public transport, parking and training facilities to ensure long term efficient and reliable transit for workers.

34	Hoch and Wilkinson Livestock and Property Pty Ltd	Social	Workforce profile		Clermont on the other hand, does not have the same issues. It is surrounded by available freehold land. In addition, a significant number of investors have invested in proposed developments, the list of which is attached. This has resulted in a glut of accommodation currently available or becoming available and options for families. Nominating Clermont as a collection point for personnel would provide additional incentives for investment and for the relocation of families to the area.	Vol 1, sections 3 and 4 Social Impact Assessment 3.3.2 - Project Workforce Profile	Due to the remoteness of the site and short term nature of most construction work, opportunities for local recruitment during the construction phase is limited. Further as the distance from Clermont to the proposed mine by road is about 200km, DIDO or BIBO on a shift basis (that is, where workers return to their usual place of residence after each shift) is unlikely to be feasible as the travel times would exacerbate risk of fatigue and accidents. Adani will to continue to engage with relevant state and local government stakeholders to identify possible opportunities for Clermont residents during project construction FIFO operations will fly between nominated collection points along the east coast to the private airstrip located within the offsite infrastructure area. Optimal collection points will be determined after full consideration to skilled workforce availability in the immediate vicinity of airports, airport capacity and flight schedule performance, surrounding infrastructure such as public transport, parking and training facilities to ensure long term efficient and reliable transit for workers. Adani is committed to considering DIDO or BIBO arrangements out of regional centres including Clermont, Emerald and Charters Towers once road infrastructure is improved. Considering the potential traffic volumes, reliable all-weather access roads are required, including between the Gregory Developmental Road and the Project (Mine) site. Refer to SIA SEIS Volume 4 Appendix D1 Sections 6.4, 6.4, 7.4, 8.6 and SIMP SEIS Volume 4 Appendix D1 Section 3.5
34	Hoch and Wilkinson Livestock and Property Pty Ltd	Social	Workforce profile		It is suggested, for certainty and to encourage the long term growth of the town of Clermont, that Adani specifically nominate a % of their workforce to be employed from Clermont - this would provide incentives for people to move to the area, and also provide incentives for people to invest in the area. It would also give confidence to the investors who have already invested in the area and boost confidence in the local property market. In addition, if the company committed to increasing the % of the workforce to be gained from Clermont annually, this would allow for measured growth, and not place instant pressure on existing infrastructure and government services. Planning for the future could be done with the expected increase in workforce, and consequent population growth in mind.	Vol 1, sections 3 and 4 Social Impact Assessment 3.3.2 - Project Workforce Profile	Due to the remoteness of the site and short term nature of most construction work, opportunities for local recruitment during the construction phase is limited. Further as the distance from Clermont to the proposed mine by road is about 200km, DIDO or BIBO on a shift basis (that is, where workers return to their usual place of residence after each shift) is unlikely to be feasible as the travel times would exacerbate risk of fatigue and accidents. Adani will to continue to engage with relevant state and local government stakeholders to identify possible opportunities for Clermont residents during project construction FIFO operations will fly between nominated collection points along the east coast to the private airstrip located within the offsite infrastructure area. Optimal collection points will be determined after full consideration to skilled workforce availability in the immediate vicinity of airports, airport capacity and flight schedule performance, surrounding infrastructure such as public transport, parking and training facilities to ensure long term efficient and reliable transit for workers. Adani is committed to considering DIDO or BIBO arrangements out of regional centres including Clermont, Emerald and Charters Towers once road infrastructure is improved. Considering the potential traffic volumes, reliable all-weather access roads are required, including between the Gregory Developmental Road and the Project (Mine) site. Refer to SIA SEIS Volume 4 Appendix D1 Sections 6.4, 6.4, 7.4, 8.6 and SIMP SEIS Volume 4 Appendix D1 Section 3.5
34	Hoch and Wilkinson Livestock and Property Pty Ltd	Social	Workforce management	Travel independently to the collection point In its current form, it is proposed that workers employed elsewhere, other than the collection points on the east coast, are to travel independently to the collection points.	Clermont should be utilised as a collection point for employees. FIFO would be possible from Clermont Airport, and a BIBO option could also be utilised. The road from Clermont to the Carmichael Minesite Turnoff is more than adequate as it is a type two road train route. Furthermore, if Adani employ local, experienced people, but keep the collection points on the east coast, the significant travel to the east coast by local employees would add significantly to the excessive traffic already experienced on the highways to the coast from regional communities. It is ludicrous to require someone to travel in excess of 500km to travel a further 500 km to fly to a work site that is only 160 km away. It also defeats the premise of the fatigue management plan if the same is required at the end of the shift.	Vol 1, sections 3 and 4	Due to the remoteness of the site and short term nature of most construction work, opportunities for local recruitment during the construction phase is limited. Further as the distance from Clermont to the proposed mine by road is about 200km, DIDO or BIBO on a shift basis (that is, where workers return to their usual place of residence after each shift) is unlikely to be feasible as the travel times would exacerbate risk of fatigue and accidents. Adani will to continue to engage with relevant state and local government stakeholders to identify possible opportunities for Clermont residents during project construction FIFO operations will fly between nominated collection points along the east coast to the private airstrip located within the offsite infrastructure area. Optimal collection points will be determined after full consideration to skilled workforce availability in the immediate vicinity of airports, airport capacity and flight schedule performance, surrounding infrastructure such as public transport, parking and training facilities to ensure long term efficient and reliable transit for workers. Adani is committed to considering DIDO or BIBO arrangements out of regional centres including Clermont, Emerald and Charters Towers once road infrastructure is improved. Considering the potential traffic volumes, reliable all-weather access roads are required, including between the Gregory Developmental Road and the Project (Mine) site. Refer to SIA SEIS Volume 4 Appendix D1 Sections 6.4, 6.4, 7.4, 8.6 and SIMP SEIS Volume 4 Appendix D1 Section 3.5
34	Hoch and Wilkinson Livestock and Property Pty Ltd	Social	Social Impact Assessment	Unemployment figures for clermont have been taken from the period prior to the closure of rio tinto's blair athol mine. Consequently, the unemployment rate as well as the availability of qualified mine employees is understated.	Use more recent figures. Consider the affect the closure of an operational coal mine and the cutbacks from surrounding mines has had on the employment figures from the area.	Vol 1, section 3	The demographic baseline assessment for the study area has been revised based on the latest publically available data (SEIS Volume 4, Appendix D1).
34	Hoch and Wilkinson Livestock and Property Pty Ltd	Social	Housing	Housing availability - housing stress and declining affordability evident in dsa	Once again figures used were prior to announcements of cutbacks and closures. There was significant activity in the housing market prior to these cutbacks due to low supply and high demand. Since the announcements, demand has decreased rapidly as investors and home owners delay investing in Clermont due to uncertainty in the future, and possible losses. Affordability is consequently improving. The forces of Supply and demand will ultimately be the determinant of affordability. In the current climate, there is a large number of available properties for sale and very few buyers. Consequently, sellers are competing with many other properties for the attention of a few. The most significant factor they can manipulate to achieve a sale is price. In 2010, the average % difference between the listing price and the sale price was 4.7%. In 2012, this has increased to 5.64% and in properties that have settled in 2013, the figure has increased to 7.29%. It is a buyer's market.	Vol 1, section 3	Comments are noted. As stated in SIA SEIS Volume 4, Appendix D1 Section 6, all project workforce will be located in Project camps and workers accommodation village close to mine site.

34	Hoch and Wilkinson Livestock and Property Pty Ltd	Social	Housing	(as above)	As far as supply goes, there has been significant residential developments opened and approved since the time of the EIS and there is currently a large number of quality rentals available for families, or singles. With the number of developments about to commence, there is a great deal of potential to attract families to the area, if there is work available. Having Adani as a major employer of the town, gives credibility to the decisions and risks that investors have made and will make in the future, whether they be Mum and Dad investors or full time investors. It would be recommended therefore to use more current figures to reflect the state of affordability as the figures used in the assessment were when there was little supply and large demand. It is also recommended that the developments proposed and approved be considered as opportunities to base a % of the Adani workforce in Clermont.	Vol 1, section 3	Comments are noted.
34	Hoch and Wilkinson Livestock and Property Pty Ltd	Social	Employment opportunities	Local business issues - EIS has identified local businesses finding it difficult to compete with mining jobs in terms of pay	This should not be used as an opportunity to bypass local employees who have every right to apply for positions, mining or otherwise. Few businesses are able to compete with mining jobs in terms of pay - the challenge is for businesses to offer something else to attract and retain staff. This should not be a factor in any employment decision made by Adani. In recognition of the fact that employees may leave to become involved in the mining industry, Adani could compensate local businesses by providing business advice, and coaching to local business men and women on attracting and retaining staff. To implement strategies that prevent local workers from making personal decisions about employment because of the impact this may or may not have on local businesses is discriminatory and does not add to the development of the town.	Vol 1, section 3.3.4 Economic Growth & Regional Development	Comment regarding local business opportunities and community development are noted and addressed in the revised SIA and SIMP (SEIS Volume 4 Appendices D1 and D2).
34	Hoch and Wilkinson Livestock and Property Pty Ltd	Social	Regional business opporunity	Local Business Issues - some local businesses may struggle to compete with business located in larger centres	This sounds like an excuse not to use local business. We would strongly suggest that local businesses be given opportunities to tender for the provision of goods and services. If their tender is competitive, it should be accepted. If local businesses feel they can compete, then they will apply. If they feel they can 't, then they won't. A firm commitment to use local suppliers when it is financially viable to do so should be included. The local industry participation plan is promising, but there should be some quantitative measure in place. For example, if local business is competitive within a specific percent for the supply of goods/services then their tender is within an acceptable level and will be acceptable to the company. Having a quantitative measure will allow local businesses to be competitive, and provide assurances to take risks and develop their business further.	Vol 1, section 3.3.4 Economic Growth & Regional Development	Comments are noted and updates on Adani's approach to ensure local business opportunities are provided in the SIMP SEIS Volume 4 Appendix D2 Sections 3.5 and 3.6
34	Hoch and Wilkinson Livestock and Property Pty Ltd	Social	Workforce management	BIBO from Clermont is only considered in the assessment once road infrastructure is improved.	Road infrastructure between Clermont and the Carmichael Mine Site turn off is adequate - the road is a type two road train route, and consequently has been developed with this type of heavy vehicle use in mind. The road is 110 km/hr zone from the Kilcummin turn off through to beyond the Beylando Crossing. The road has only been fully sealed in the past 20 years. Local land owners from the Gregory Development Road through to the mine site have said that Adani have committed to sealing the road from the highway through to the mine site. We suggest that BIBO/DIDO from Clermont be considered from the outset.	Vol 1, sections 3 and 4	As described in SIA SEIS Volume 4 Appendix D1 Sections 6.3 and 6.4 and SIMP SEIS Volume 4 Appendix D2 Sections 3.5 and 3.6, DIDO and BIBO from Clermont will be considered based on safe access and fatigue management between Clermont and mine site.
34	Hoch and Wilkinson Livestock and Property Pty Ltd	General comment	General comment	We believe that Clermont is well poised to meet the challenges that the Adani mine will have on our community. We believe however that the impact assessment has not recognised the community's readiness.	Solutions: 1. Have Clermont as one of the collection points for operational staff. 2. Utilise a FIFO/BIBO/DIDO operational method from Clermont. 3. Commit to employing a nominated percentage of the workforce from Clermont - 1 %. 4. Commit to increasing this % on an annual basis by a specific amount. 5. Commit to utilising Clermont business for the provision of goods and services unless their tender is outside of a predetermined % from the average tender. 6. Reassess the employment figures and the median house price for Clermont. 7. Compensate local businesses by providing mentoring and advice on the attraction and retention of staff.	Vol 1, sections 3 and 4	Adani will continue to work on its workforce management and has considered its options for employment (refer SEIS Volume 4 Appendix D1 Social Impact Assessment and D2 Social Impact Management Plan)
35	Mackay Conservation Group	Air quality	Human health impacts	An increasing range of adverse health effects has been linked to air pollution and at ever-lower air pollutant concentrations. This is especially true of airborne particulate matter. Australian and Queensland air quality standards for fine particulate (<PM2.5) emissions meet World Health Organisation (WHO) Interim Target Guidelines but the 24-hour standard of 25 micrograms per cubic metre (µg/m3) is well above the 3-5 µg/m3 that WHO states can affect human health. So is the annual WHO IT annual guideline of 10 µg/m3 (Table 1 - refer orignal submission) Both WHO and the Australian National Pollution Inventory also state that no safe threshold has yet been identified for exposure to particulates below which there are no adverse health effects. The 24-hour standard is based on a 99 per cent probability of cardiovascular or respiratory harm to human health. Therefore, no guideline value can be specified that, if achieved, will fully protect human health.		Vol 4, App AD, section 3.1, 3.2	The assessment is in accordance with ToR and legislative standards.
35	Mackay Conservation Group	Air quality	Human health impacts	While these standards were designed for long-term exposure that was not meant to be as long as the ninety plus years the Carmichael Coal Mine is proposing to operate. No air quality standard has been set for longer than one year of exposure. Impacts from long-term exposure to coal dust from the Carmichael Mine's rail and port projects could affect up to six human generations and many more generations of wildlife and domestic animals as they have shorter life spans. Intergenerational equity has not been considered.		Vol 4, App AD, section 3.1, 3.2	The assessment is in accordance with ToR and legislative standards.

35	Mackay Conservation Group	Air quality	Flora and Fauna impacts	There are no standards that have been established for wildlife and domestic animal exposures. They would also ingest coal dust that coats flora that animals eat. Coal dust is a tumorigenic agent in experimental animals. It is incorrect then for Adani to infer that human air quality standards are applicable to animals.		Vol 4, App AD, section 4.6	The assessment is in accordance with ToR and legislative standards.
35	Mackay Conservation Group	Air quality	Flora and Fauna impacts	This is especially of concern because of the presence of threatened species such as the endangered black-throated finch (southern species) listed under the Australian EPBC and Queensland Nature Conservation Acts. Populations of this species are present in large numbers at the proposed mine site and are recorded in the proposed adjoining Offsets Hub and surrounding properties in suitable habitat. They are also highly likely to have suitable habitat along parts of Adani's proposed coal rail line. As they are reported to have a range of only 3 km, their exposure to coal dust would be prolonged. Such a small bird, like human children, would be more susceptible to lower levels of exposure than the human air quality standards.		Vol 4, App AD, section 4.6	Comments are noted.
35	Mackay Conservation Group	Air quality	Flora and Fauna impacts	Wildlife and stock are not listed as sensitive receptors in the EIS.		Vol 4, App AD, section 3.4	Sensitive receptors have been identified based on DEHP guidelines and requirements.
35	Mackay Conservation Group	Air quality	Local meteorology	Available wind direction data shows that prevailing winds would blow from the east northeast and southeast (Fig.3.6) Adani's modelling predicts that PM2.5 particulates will drop to air quality guidelines within 40m of their coal rail line. In view of the fact that upper winds carry fine coal dust from China to the west coast of the USA where it increases pollution levels in west coast cities; this modelling appears extremely optimistic and hard to accept		Vol 4, App AD, section 3.3.4	Comments are noted. Air quality assessment was carried in accordance with ToR, industry guidelines and DEHP standards. Based on the assessment all relevant criterion for air quality will be met at sensitive receptors.
35	Mackay Conservation Group	Air quality	Flora and Fauna impacts	"*Coal dust emissions from loaded coal trains are emitted by wind erosion mainly dominated by train movement (speed), and have the potential to directly impact flora species and, to a lesser degree, fauna communities adjacent to railway systems. Potential issues within every railway system within central Queensland include economic loss, public nuisance and potential impact on the environment. For example, dust deposition on leaves can reduce the photosynthetic quality of the flora and impede plant growth and affect grazing productivity. Such an impact, if large enough, could degrade the health of the flora (native or pasture related) and cause plant dieback due to prolonged exposure. This in turn may reduce food resources for fauna communities* ." MCG Comment - It is not only loss of photosynthesis but damage caused by ingestion and inhalation of coal dust that should be considered. Birds will avoid coal dust on lerps for example		Vol 4, App AD, section 4.6	Noted. Advice has been provided on this issue by Queensland Health and DEHP. No issues of concern have been raised by these organisations.
35	Mackay Conservation Group	Air quality	Flora and Fauna impacts	*"An environmental review by Connell Hatch (2008) reviewed available literature for the impacts of coal dust on flora and fauna, crops and livestock. It was argued that air quality goals or standards to protect human health and amenity, such as in the EPP Air, were sufficient for the protection of flora, fauna, crops and livestock against dust impacts, as no goals and standards have otherwise been set for the nonhuman categories in the policy concerning protecting agriculture or health and biodiversity of ecosystems (including for natural, semi-natural or uncultivated areas)."* MCG Comment - The lack of standards for particulates pollution for non-humans does not justify the use of human standards which themselves are no high enough to prevent all harm.		Vol 4, App AD, section 4.6	Comments are noted. Air quality assessment was carried in accordance with ToR, industry guidelines and DEHP standards. Based on the assessment all relevant criterion for air quality will be met at sensitive receptors.
35	Mackay Conservation Group	Air quality	Flora and Fauna impacts	*Coal dust deposition on cotton crops at a rate of 500 mg/m²/day can be used as a threshold for adverse impacts on crops and vegetation (Connell Hatch 2008). It has also been experimentally demonstrated that even with livestock having access to feed containing coal dust at rates up to 8,000 mg/m2/day the following key indicators were not affected: Feed preference Palatability Quantity of feed eaten Quantity of milk produced* MCG Comment - There is no reference for the second claim. It makes no reference to physical damage of the animals or quality of meat and milk that was produced. If the animals ingested coal dust they would have ingested heavy metals which over time would have accumulated to higher concentrations. Were these studies long-term? It would appear not as some damage would have been done over time. Our information from graziers is that cattle avoided feeding on grass covered with coal dust when they were given an option of grass not covered with coal dust.		Vol 4, App AD, section 4.6	A study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust.
35	Mackay Conservation Group	Air quality	Flora and Fauna impacts	Prevailing wind directions means fine hazardous coal dust will blow for most of the time from the mine site over the proposed offset hub sites to the west, northwest and southwest. In the absence of evidence to the contrary this diminishes greatly the value of the offset hub sites to mitigate for the loss of highly significant habitats for the endangered black-throated finch that will be mined if the project proceeds. Fine coal dust can travel for hundreds of kilometres when borne aloft and carried by strong winds (as noted in section 3.3.6 in Appendix 4 copied below). It will accumulate over time.		Vol 4, App S	Comments are noted. Air quality assessment was carried in accordance with ToR, industry guidelines and DEHP standards. Based on the assessment all relevant criterion for air quality will be met at sensitive receptors.
35	Mackay Conservation Group	Air quality	Local meteorology	*... Night-time mixing heights were as low as 50 m during the calmest periods but could reach to above 1,500 m during nights with strongest winds* What accumulated levels of coal dust will be in soils and waterways downwind and downstream of this mine? How will heavy metals in this dust work their way up the food chain and in what concentrations will they be at each level of the food chain?		Vol 4, App AD 3.3.6	Comments are noted. Air quality assessment was carried in accordance with ToR, industry guidelines and DEHP standards. Based on the assessment all relevant criterion for air quality will be met at sensitive receptors.

35	Mackay Conservation Group	Water resources	Contaminant release	Inevitably there will be “controlled” releases of mine wastewaters after the more frequent and intensive flood events we are experiencing as climate change proceeds. These wastewaters will contain heavy metals, hazardous in higher concentrations, which will settle downstream and as they do not biodegrade, will slowly work their way up the food chain, where they can cause harm to health. Measures of such pollutants in the water column at wastewater release times are no guide to food chain concentrations as they can bio-accumulate in benthic biota at the bottom of the food chain.		Vol 4, App S 5.5, 5.6; Appendices O and Q	Comments are noted.
35	Mackay Conservation Group	Air quality	Contaminant release	Because the project’s coal mine area contains internal drainage waterways, with no outlet to the sea heavy metals will accumulate more than in waterways with sea access, and the impacts will be more severe over time. How will the ecology of nearby Lake Buchanan and Lake Galilee, (listed in the Directory of Nationally Important Wetlands, and important sites for bird species), be affected by this rain of coal dust? This coal dust rain will come not only from the proposed Carmichael Coal Mine but also from the proposed China Stone Coal Mine (60 Mtpa) if it is approved. This issue is not addressed in the EIS.		Vol 4, App S 5.5, 5.6; appendices O and Q	Noted. Coal dust will be managed in accordance with the project EMPs. Refer to SEIS Volume 4 Q1 EMP).
35	Mackay Conservation Group	Air quality	Human health impacts	In the absence of evidence to the contrary Adani is contravening the Precautionary Principle which underpins the Queensland Environmental Protection Act and the Australian EPBC Act. Coal dust is particularly hazardous because it contains heavy metals such as arsenic, lead, selenium, and mercury. Many heavy metals are carcinogenic at high concentrations and/or under prolonged exposure. Air quality models such as CALPUFF cover all particulate sources. They do not tell us what the actual concentrations of coal dust will be. As coal dust - can be more hazardous than other particulates; - the mine will be one of the largest in Australia; - it will have by far the longest lifespan; and - both humans and wildlife will be affected by coal dust from this proposed project, the health risks of this exposure need to be explicitly quantified and addressed. We are concerned greatly about what this landscape will be suitable for at the end of this mine’s life!		Vol 4, App S 5.5, 5.6	Noted. Advice has been provided on this issue by Queensland Health and DEHP. No issues of concern have been raised by these organisations.
35	Mackay Conservation Group	Air quality	Downstream impacts	Adani is a vertically integrated company and downstream impacts by a project proponent are required to be considered in an EIS. The health impacts and risks on communities in India surrounding the power plants where it proposed to burn coal from the Carmichael Coal Mine should also be addressed in this EIS but are not.		Vol 4, App S section 4	It is not a requirement of the EIS ToR or environmental assessment legislation to address this issues.
35	Mackay Conservation Group	Draft offset strategy	Potential Offsets	Because such important black-throated finch is proposed for clearing and baseline surveys in the “likely” habitat to the west of EPC1690 have not been taken for the recommended 10 years of seasonal surveys the suitability for proposed offset hubs in these areas to replace what is lost is questionable. Russell Fairfax formerly an ecologist with DERM researched the difference between areas cleared for agriculture and coal mining in the Bowen Coal Basin Brigalow Belt Bioregion and found lower bird diversity in the Brigalow Belt than farther west in the more arid but less cleared Desert Uplands in the Galilee Basin (now proposed for the Carmichael Coal Mine and other huge coal mines). The opposite would be expected if the land had not been subject to broad scale clearing for farming and clearing for mining. The difference was also obvious for species richness in mammals, frogs and reptiles.		Vol 4, App AH, sections 6 and 7	Opinion noted.
35	Mackay Conservation Group	Draft offset strategy	Potential Offsets	There is approximately 814 sq. km of important black-throated finch habitat within the proposed mining footprint, mostly within EPC 1690. Given the 8:1 offset ratio is 1,712 sq km available of suitable black-throated finch habitat available namely Regional Ecosystem 10.5.5 close to (within 3 km) reliable water supplies? Or are we looking at revegetation programs to try to meet offset requirements. If so the 240 years needed to establish nesting trees is quite a barrier to a successful offset. DEHP should admit that this mine and others like it in the Galilee Basin presents a net loss of biodiversity if the extensive clearing of woodlands that is proposed, proceeds.		Vol 4, App AH, sections 6 and 7	Opinion noted.
35	Mackay Conservation Group	Draft offset strategy	Potential Offsets	There are two reasons why the possibly suitable habitat mapped to the west may not be suitable. One it the large amount of hazardous fine coal dust that will blow over it from the mine’s operations during its life, but emissions from other adjoining coal mine planned in the region. The other is that the western portion of Adani’s EPC1080 covers much of the area west of EPC1690. While DEHP plans to establish long-term offsets to protect areas from future mining the Mineral Resources Act still provides no such protection once the established offset period expires. This is a recipe for continued clearing and habitat loss for future mining. Given the Carmichael Mine plans to operate for 90 years that will far exceed any offset protection DEHP can offer. So the net outcome for the iconic black-throated finch and other wildlife that depend on this woodland habitat seems bleak without changes in the Mineral resources Act to provide real permanent protection.		Vol 4, App AH, sections 6 and 7	Opinion noted.
35	Mackay Conservation Group	Draft offset strategy	Potential Offsets	Fairfax also found that the eucalyptus species (E. melanophloia) that the black-throated finch prefers to nest in only grows during La Nina years when adequate rain is available. It can take 190 years for these trees to reach maturity. Mining companies will not want to wait that long.		Vol 4, App AH, sections 6 and 7	The submission made was a statement of opinion, therefore no response has been provided.

35	Mackay Conservation Group	Draft offset strategy	Potential Offsets	If large scale clearing for mining occurs within the Galilee Basin as planned there will not be sufficient offset habitat available and mining companies and the Queensland government will look to rehabilitation programs for compensatory offsets. As this tree species takes so long to grow there could be a significant gap in suitable available black-throated finch habitat. The black-thoated finches in the path of mining will die. They are not relocatable. The DEHP goal is species survival in suitable remaining habitats with a covenant over them for a certain time. But until the QLD Mineral Resources Act is changed to provide permanent protection of quality undisturbed habitats black-throated finch and other like species in the Galilee and Bowen Basins have a dim future.		Vol 4, App AH, sections 6 and 7	Opinion noted.
35	Mackay Conservation Group	Nature conservation	Black-throated finch	These large mines planned in the Galilee Basin will also involve huge waterway diversions and the impacts of those on the survival of the black-throated finch which needs clean water every day, have yet to be ascertained.		Vol 2, section 5 Vol 4, App N3	Consultation meetings were held with the Black-throated Finch Recovery Team (3 May 2013) and DSEWPaC (7 June 2013) and a four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local monitoring (detailed) on the Mine Area. Further information is presented in a draft Black-throated Finch Adaptive Monitoring Plan. A detailed plan was prepared for the Local monitoring (observation) on the Mine Area and the first survey was conducted in May 2013. It established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Detailed vegetation and habitat data was collected at the 2 ha sites. Survey methods follow those in EPBC Significant Impact Guidelines. Surveys were conducted over 8 days. A further 208 records of BTF were recorded mainly from 2-ha counts in 12 locations, including 3 records of nesting. The camera traps recorded a further 6 locations and mainly utilising troughs and ephemeral water. The results are presented in SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species Management Plan following the principles of adaptive monitoring and management. This program seeks to better understand the presence of the BTF within the region with the objective of informing long-term management measures.
35	Mackay Conservation Group	Water Resources	Surface water and Groundwater	This mine will have unacceptable impacts on regional supplies of groundwater and surface water and their water quality. How can one independently assess the impacts on bores of interest, aquifers of interest or the springs for example if well bore data is insufficient? How do these springs operate and what will be the effect of this and/or other projects considered by the Coordinator-General on these aquifers? The Burdekin Water Plan says little about surface and groundwater resources in the Belyando River Basin where this mine and other massive mines like it, plan to operate.		Vol 2, section 6 Vol 4, App P1, P2, Q, R	Separate water quality studies have been undertaken for the Doongmabulla springs complex (May and June 2012) and Mellaluka springs complex (April 2013) to: 1. Identify spring locations. 2. Collect information about the potential groundwater sources to the springs; 2. Collect a set of baseline quality data. These studies are summarised in an additional section to EIS Volume 4 Appendix R (2.4 Doongmabulla and Mellaluka Spring Sampling) and discussed in Volume 4 Appendix R 4.8.1 - Doongmabulla Springs and in Appendix R 4.8.2 - Mellaluka Springs and SEIS Volume 4, Appendix J3. The Addendum to the Mine Hydrogeology Report (SEIS Volume 4, Appendix K6) provides more detailed information on inter-aquifer connectivity; flow of water; recharge and discharge mechanisms; and impacts to the Springs.
35	Mackay Conservation Group	Matters of National Environmental Significance	Threatened species	The Environmental Impact Statement for the project has not fulfilled its terms of reference for the following nationally threatened species and communities: Koala, Waxy cabbage palm, two endangered plants, Eryngium fontanum and Eriocaulon carsonii, and the endangered ecological community, the community of native species dependent on natural discharge of groundwater from the Great Artesian Basin.		Vol 1, section 11 Vol 4, app J	Opinion noted.
35	Mackay Conservation Group	Matters of National Environmental Significance	Threatened species	There is no assessment of the impact of the mine and its consequential impacts on the nationally vulnerable Waxy cabbage palm, including intensification of flooding of the riparian zone caused by the proposed levy banks on the Carmichael River, and of the impact of the dramatic 30m draw down of groundwater expected in the 60th year of the mine's operation.		Vol 1, section 11 Vol 4, app J	A population survey was conducted of the waxy cabbage palm at Doongmabulla Springs and in the sections of the Carmichael River that adjoin and pass through the mine site (Waxy Cabbage Palm Population Survey, SEIS Volume 4 Appendix J4). The revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) also discusses this species. Revised groundwater modelling (SEIS Volume 4 Appendix K5) together with the population survey have contributed to a revised impact assessment on this species. Adani will develop a Groundwater Dependent Ecosystem Management Plan to manage and mitigate potential impacts on waxy cabbage palms and Mellaluka and Doongmabulla Springs. This commitment is part of the Revised Project Commitments SEIS Volume 4, Appendix G Section 2.3.4.
35	Mackay Conservation Group	Water Resources	Groundwater	There is no assessment of the impact of the dramatic levels of drawdown of groundwater expected for this mine on groundwater-dependent species in the surrounding area as required under regional Water Resource Plans under the Queensland Water Act.		Vol 2, section 6 Vol 4, appendix R	The SEIS Volume 4, Appendix K1 Updated Mine Hydrogeology Report now includes further consideration and description of the relative sensitivity of springs to the predicted drawdowns (see Sections 5.6.6 and 5.7.4. The ecological impacts of the predicted drawdowns on local springs and Waxy Cabbage Palms are assessed in the SEIS Volume 4 Appendices J3 and J4.
35	Mackay Conservation Group	Cumulative impacts	Threatened species	There is no adequate assessment of cumulative impacts of the project on three key threatened fauna species, Black-throated finch (southern), Squatter pigeon and Koala, particularly with reference to groundwater and extensive clearing for this and other mines in the Galilee Basin.		Vol 1, Section 8	Impacts on the Black-throated finch (southern), Squatter pigeon and Koala are discussed further in the revised ecological assessment report (refer to SEIS Volume 4 Appendix J1 Revised Ecological Assessment Report).Further information on groundwater impacts have been discussed in the revised hydrogeology report (refer to SEIS Volume 4 Appendix K1 Revised Mine Hydrogeology Report). This report has been prepared in accordance with the Project ToR and in consultation with the OCG.
35	Mackay Conservation Group	Water Resources	Groundwater	At its greatest extent of operations and development, after approximately 60 years (of a ninety year mine life), drawdown of up to between 30 to 60 m have been predicted for the groundwater table in the vicinity of the Carmichael River. How will other stakeholders in the Galilee Basin such as graziers and communities and the region's ecology survive that? What ongoing impacts will there be from that on the adjoining Great Artesian Basin?		Vol 2, section 6 Vol 4, Appendix R	Additional reporting on the potential impacts of the project on GAB water resources has now been included in Sections 5.6.7 and 5.7.5 of SEIS Volume 4, Appendix K1 Updated Mine Hydrogeology Report.

35	Mackay Conservation Group	Water Resources	Water supply	The proponent does not seem certain about how much water this mine will use, and there are contradictions in the EIS on this question, ranging from 4 to 25GL harvested from flood water, groundwater and the Belyando River. The EIS needs to clarify how much water it will draw from the various sources identified and what impact this will have downstream and on groundwater.		Vol 2, section 6 Vol 4, Appendix P1	The updated Project Description (SEIS Volume 4 Appendix B) and Mine Water Balance (SEIS Volume 4 Appendix K2) provide an updated on project water requirements and sources for input water.
35	Mackay Conservation Group	Water Resources	Water supply	As the proponent proposes to fulfil their water needs from ground and surface water harvesting, there needs to be a closer examination of the impact this will have at the sub-catchment level. The overview of water use in the Belyando/Suttor catchment is too coarse to understand the impact of the mine on water resources, and more detailed work on the water use and impacts on the Carmichael and Belyando Floodplain sub-catchments is needed before the public can accurately understand how this mine will impact on the region. There will also be impacts on adjoining mining operation planned in the future.		Vol 2, section 6 Vol 4, Appendix P1	Additional groundwater modelling and water balance modelling has been undertaken. Refer to the SEIS Updated Mine Hydrogeology Report Appendix K1 and the SEIS Water Balance Report Appendix K2.
35	Mackay Conservation Group	Water Resources	Surface water	How will the extensive clearing of woodlands affect salinity levels in the Belyando River?		Vol 2, section 6 Vol 4, App P2, Q	Cleared or disturbed land will be managed in accordance with the site Environmental Management Plan (refer to SEIS Volume 4 Environmental Management Plan - Mine). All disturbed areas will be directed to sedimentation basins where it will be either reused or tested and treated before discharge into the Carmichael River.
35	Mackay Conservation Group	Matters of National Environmental Significance	Great Barrier Reef Marine Park	Downstream impacts on the Burdekin River and Great Barrier Reef i.e. increased flood damage risks, increased sediment flows, increased heavy metals from wastewater dumping following flooding, risk of wastewater retention pond failures and other hyro-ecological impacts e.g. higher flood flows tearing out riparian vegetation also do not seem to be addressed.		Vol 1, section 11 Vol 4, app J	The revised MNES Report (Volume 4 Section H) includes further information on water quality impacts on the GBR (see response to 27AS) and information from the revised hydrological modelling regarding changes in flows.
35	Mackay Conservation Group	Hazard and Risk	Climate Change Impacts	Given the proposed long mine life and climate change impacts such as higher flooding levels and more intense storm events downstream flooding damage and riparian losses are likely. There is a chance at least one or more 100+ year events will occur and swamp wastewater retention ponds. How will downstream stakeholders be compensated when Adani is responsible for such damage? What is the quantified level of risk of contamination of the water supply of the Burdekin Dam and Townsville's water supply?		Vol 2, section 3 and 12	Comments regarding flooding have been noted. Flood modelling has been reviewed against the detailed mine plan and detailed in the SEIS Volume 4 Appendix K4 Flood Study. The MNES report includes a discussion on the mine area contributing to a very small percent area (0.44 percent) to the Burdekin Falls dam catchment (SEIS Volume 4, Appendix H). Equally, Townsville's location away from the Mine site presents substantial hydrological barriers and other catchment land uses.
35	Mackay Conservation Group	Cumulative impacts	Cumulative impact assessment methodology	A Strategic Assessment of mining impacts and how they will be addressed in the Galilee Basin is needed now to assess the viability and cumulative impacts of these large mining projects.		Vol 1, Section 8	Comments are noted.
35	Mackay Conservation Group	Introduction	Project proponent	It is also not clear that Adani has the necessary funds to build this project and repair damage as no financial information has been provided in the EIS, yet failure could cause permanent environmental damage on a very large scale and successful rehabilitation of mine reclamation sites is uncertain and unlikely given the fragile soils and low and variable rainfall in most years.		Vol 1, Section 1.1	Opinion noted.
35	Mackay Conservation Group	Greenhouse Gas emissions	Climate Change Impacts	With regard to climate change impacts the EIS is deficient in respect of climate change impacts in the following key respects: 1. Scope 1 Emissions should include downstream impacts. The coal mined from this project will produce, when burnt, up to 128 million tonnes of carbon dioxide per year. Over 90 years that amounts to 11,520 million tonnes of carbon dioxide equivalent emissions. That is a very significant contribution to climate change impacts. As Adani is a vertically integrated company downstream impacts of its GHG contributions to global warming as well as pollution impacts from burning of its Carmichael coal should be assessed in the EIS as Scope 1 emissions.		Vol 2, sections 3 and 8 Vol 4, App T	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
35	Mackay Conservation Group	Climate, Natural Hazards and Climate Change	Climate Change Impacts	2. The EIS fails to assess the values and resilience of the receiving environment: The resilience of the atmosphere to further emissions has already been exceeded and the atmosphere is approaching the critical threshold of 2oC warming. However EIS does not acknowledge these facts and assess the proposed emissions in the context of the resilience of the receiving environment.		Vol 2, sections 3 and 8 Vol 4, App T	Noted. Scope 3 GHG emissions are not included in government requirements or the TOR
35	Mackay Conservation Group	Greenhouse Gas emissions	Greenhouse Gas emissions	3. The EIS fails to assess cumulative emissions: As carbon dioxide accumulates in the atmosphere, the cumulative emissions for life of the Project are more relevant to the environmental harm caused than annual emissions. However the EIS fails to report the cumulative emissions from all sources.		Vol 2, section 8 Vol 4, App T	The assessment is in accordance with the ToR in terms of Scope 1 and 2 emissions.
35	Mackay Conservation Group	Introduction	Alternatives to the project	4. The EIS fails to identify feasible alternatives: The EIS fails to point out that solar power is to become cheaper than coal in India in 2017 making the need for the project insufficient to justify the above impacts.		Vol 1, Section 1.5	Comment noted. Scope 3 GHG emissions are not included in government requirements or the TOR
36	Trescowthick	Introduction	Project description	Proposal to develop a 60 million tonne per annum thermal coal mine, with an operating life of approximately 90 years. Issue: climate change. The Australian Government's State of the Environment Report 2011 confirms that the Earth is warming and that major reductions in greenhouse gas emissions are urgently needed nationally and internationally. Further, the State of the Environment Report 2011 confirms the widely accepted fact that increased greenhouse gas emissions are the result of burning fossil fuels. Further, burning coal is the single largest source of greenhouse gas emissions, accounting for 20% of emissions globally. We should not be mining coal, and we should definitely not be building new coal mines. The State of Queensland should be particularly aware of this, given the catastrophic climatic events it has faced in recent times.	• Carmichael Coal Mine and Rail Project SHOULD NOT GO AHEAD. • If the project does get approval, all greenhouse emissions attributable to the Carmichael coal mine – that is, from the coal being dug up by Adani at Carmichael mine, and then shipped from Australia to India – should be counted as an Australian greenhouse gas emission, and thus paid for accordingly. This is because the greenhouse gas emissions from the final product of the Carmichael Project have not been accounted for.	Vol 1, section E.1 Introduction	Comment noted. Scope 3 GHG emissions are not included in government requirements or the TOR

36	Trescowthick	Introduction	Project description	"The Project (Rail) concept design is based on: • minimising environmental impacts • minimising disturbance to existing infrastructure • limiting fragmentation of landholdings • meeting engineering design criteria." Issue: The concept design is 'based' on 'standards' so vague that it is impossible for Adani to be properly judged by the criteria outlined above.	To enable genuine consultation (and long-term accountability), the standards on which the Project (Rail) concept design are based must actually mean something measurable. For example, 'minimising environmental impacts' must be matched with clear base standards, as set out by an independent body. The terms 'minimising' and 'limiting' cannot be used without a measurable standard for them to be compared to.	Vol 1. E.2.2 Project (rail)	Comments are noted.
36	Trescowthick	Cultural Heritage	Cultural Heritage Surveys	"Cultural heritage surveys will be undertaken in line with the scope of the work program, particularly ongoing agreed practices regarding cultural heritage finds. This process will allow for practical project design responses, particularly avoidance, when modification to the concept design is practical." Issue: This final line is a caveat.	Remove this caveat. Protecting our cultural heritage is a non-negotiable.	E.4 Indigenous and Non-Indigenous Cultural Heritage Vol 1, section 5	The scope and requirement for cultural heritage surveys are guided by Cultural Heritage Management Plans which have been agreed with the particular Native Title holders across the project area.
36	Trescowthick	Cultural Heritage	Cultural Heritage Surveys	The Great Barrier Reef "will not be impacted by the Project" This statement is based on the fact that the Great Barrier Reef is 300 km away from the site of the mine, however, section E.7 acknowledges that the groundwater is at a medium risk (between low and high, thus feasible). Issue: Groundwater can travel much longer distances than 300km. Therefore, it is wrong to say unequivocally that the GB Reef "will not be impacted" because that is not certain	Remove this incorrect statement from the EIS.	E.4 Indigenous and Non-Indigenous Cultural Heritage Vol 1, section 5	Opinion noted.
36	Trescowthick	Cultural Heritage	Cultural Heritage Surveys	"The Project will not impact the Tree of Knowledge" This statement is based on the fact that the Tree of Knowledge is 200 km away from the site of the mine, however, section E.7 acknowledges that the groundwater is at a medium risk (between low and high, thus feasible). Issue: Groundwater can travel much longer distances than 200km. Therefore, it is wrong to say unequivocally that "the Project will not be impact the Tree of Knowledge" because that is not certain.	Remove this incorrect statement from the EIS.	E.4 Indigenous and Non-Indigenous Cultural Heritage Vol 1, section 5	The "Tree of Knowledge" is a memorial site which replaced the actual tree which died in 2006. As such even if groundwater changes were to occur there would be no impact to this site.
36	Trescowthick	Cumulative Impacts	Greenhouse Gas emissions	"In summary, the cumulative impacts having a low risk, include: • Aquatic ecology • Air quality • Greenhouse gas emissions • Noise • Waste • Cultural Heritage (non-Indigenous) Issue: This is wrong. The greenhouse gas emissions accounted for in the Project EIS only account for the emissions created while mining, processing and transporting the coal to the coast. This means that the biggest impact of the Carmichael coal mine is unaccounted for; specifically, the greenhouse gas emissions of the product (the coal sold and burned).	The cumulative impacts of the Carmichael Project need to changed to reflect the actual greenhouse gas emissions that are attributable to the Project. That is, the actual social, economic and environmental costs associated with the Project need to be properly accounted for. This include the greenhouse gas emissions from the end product which originates from the Carmichael mine.	E.7 Cumulative Impacts	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
37	Rolls	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Non coverage of the climate change impacts of burning the coal produced at the mine	Include an assessment of the impacts of burning the coal. (refer original submission for more detail)	Volumes 2 and 3, section 8. Volume 4, Apps T and AE	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
38	QDTMR Central Region - Barcaldine Office	Transport	Transport	These sections of the EIS do not detail how the combined impacts of the two Project components – the mine and rail projects - are identified and addressed. The rail project is only referred to as a major component of the Project. While section 3.9.1 of the terms of reference (ToR) for the Project refers to the provision of separate reports for respective modes of transport (road, rail, sea and air), the provision of separate and effectively independent transport sections for the mine and rail components does not sufficiently capture the total or cumulative transport impacts of the Project.	The Department of Transport and Main Roads (TMR) believes a Supplementary EIS (SEIS) is required and should detail the combined cumulative consequential impacts of the mine and rail projects and identify how these impacts are proposed to be mitigated. All components of the Project are to be considered in summing all transport impacts associated with all phases of the project, at both the local and regional level. For simplicity, TMR submissions in relation to the Project herein refer to the combination of transport elements of the mine and rail components. A summary of the total projectrelated impacts is required to ensure all potential impacts on the road network are identified and can be assessed and mitigated. Dealing with the project components separately does not identify situations where both components are putting high volumes of traffic onto the same parts of the road network at the same time, increasing the potential adverse impact on road safety, efficiency and condition.	Vol 4, App W - Mine: Page 1-1, Section 1 'Introduction', Subsection 1.1 'Project Overview' and subsection 1.2 'Study Area' Vol 4, App AG - Rail: Pages 1-1 to 1-3, Section 1 'Introduction', Subsection 1.1 'Project Overview' and subsection 1.2 'Study Area'	Comments noted. A revised Traffic Impact Assessment has been prepared for the SEIS (refer to SEIS Volume 4 Appendix J Traffic Impact Assessment Report).
38	QDTMR Central Region - Barcaldine Office	Project Description	Project location	This section of the EIS, while broadly describing the proposed access arrangements and/or associated infrastructure works, does not address the requirements of section 3.9 (subsection 3.9.1) of the ToR. The ToR requires the provision of an overview map depicting the major inventory features, and include: - Access locations (existing and proposed) - The State-controlled road (SCR) network - Potential crossings of the SCR network associated with the proposed rail line - Any construction camps likely to be used.	The SEIS should include overview maps as stated in the ToR separately for each component and for the Project. The overview maps should depict the information relevant to the construction and operation phases in the context of the local and regional transport networks.	Vol 4, App W - Mine: Page 1-3, Section 1 'Introduction', Subsection 1.3 'Proposed Mine Access Arrangements' Vol 4, App AG - Rail: Page 1-3, Section 1 'Introduction', Subsection 1.1 'Project Overview' and subsection 1.2 'Study Area	An assessment of the traffic impacts to the local roads as a result of the Project has been undertaken and included in Volume 4, Appendix P Traffic impact assessment report).
38	QDTMR Central Region - Barcaldine Office	Introduction	Relevant Legislation and Project Approvals	These sections of the EIS refer to some relevant legislation but in combination do not address section 1.9 (subsection 1.9.1) of the ToR for the description of Commonwealth, state and local legislation and policies relevant to the Project, and for the identification of all approvals, permits, licences and authorities that will need to be obtained. This section of the ToR also requires the identification of the triggers for relevant application and approval requirements. Subsection 1.4 of the transport chapter refers to the former Integrated Planning Act 1997 rather than the Sustainable Planning Act (2009).	This SEIS should fully detail: - The Commonwealth, state and local legislation and policies relevant to the transport aspects of Project - All approvals, permits, licences and authorities that will need to be obtained - The triggers for relevant application and approval requirements for Commonwealth, state and local agencies and authorities.	Vol 4, App W - Mine: Page 1-1, Section 1 'Introduction', Subsection 1.1 'Project Overview' Page 1-3, Section 1 'Introduction', subsection 1.4 'Legislative Framework' Vol 4, App AG - Rail: Page 1-1, Section 1 'Introduction', Subsection 1.1 'Project Overview' Page 1-3, Section 1 'Introduction', subsection 1.4 'Legislative Framework'	The EIS listed all relevant approvals for both Mine and Rail in Volume 1 Introduction Section 1.9 Relevant Legislation and Project Approvals. Sustainable Planning Act 2009 is listed and discussed under Section 1.9.3.6 and Transport Infrastructure Act 1994 under Section 1.9.3.14.

38	QDTMR Central Region - Barcaldine Office	Transport	Consultation	These sections of the EIS do not address the requirements of section 1.9 (subsection 1.9.1) and section 3.9 (subsection 3.9.5) of the ToR. The relevant transport authorities should be determined by the legislative requirements as stated in section 1.9 (subsection 1.9.1) of the ToR.	The SEIS should provide a summary of consultation with regard to the transport aspects of the Project with the relevant transport authorities. The agencies and authorities included in the consultation process should be determined by the legislative requirements as stated in section 1.9 (subsection 1.9.1) of the ToR.	Vol 4, App W - Mine: Page 2-1, Section 2 'Scope and Methodology', Subsection 2.2 'Consultation' Vol 4, App AG - Rail: Page 2-1, Section 2 'Scope and Methodology' Subsection 2.2 'Consultation'	Comments regarding consultation with relevant transport authorities as identified in the ToR have been noted. As detailed in the Traffic Impact Assessment undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) the Traffic Management Plans for the project (Mine and Rail) will be developed in consultation with the Department of Transport and Main Roads, QPS and local authorities. Further to this, there has been ongoing consultation with agencies and authorities throughout the EIS and SEIS development, where Adani has met with QPS and DTMR and will continue to engage with other agencies. Summary of consultation undertaken post EIS is summarised in SEIS Volume 4, Section 3.4.
38	QDTMR Central Region - Barcaldine Office	Transport	Consultation	These sections of the EIS do not address the requirements of section 3.9 (subsections 3.9.3 and 3.9.5) of the ToR by omitting details of the consultation process. The mine impact assessment report omits details of consultation with the Queensland Police Service (QPS).	The SEIS should provide a summary of consultation with the relevant transport and traffic authorities, including QPS. The summary should provide: Details of the persons or offices consulted Consultation outcomes in relation to the scope and methodology of the impact assessment Consultation outcomes in relation to respective works programs and forward planning Consultation outcomes in relation to proposed mitigation strategies.	Vol 4, App W - Mine: Page 2-1, Section 2 'Scope and Methodology', Subsection 2.2 'Consultation' Vol 4, App AG - Rail: Page 2-1, Section 2 'Scope and Methodology' Subsection 2.2 'Consultation'	Comments regarding consultation with relevant transport authorities as identified in the ToR have been noted. As detailed in the Traffic Impact Assessment undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) the Traffic Management Plans for the project (Mine and Rail) will be developed in consultation with the Department of Transport and Main Roads, QPS and local authorities. Further to this, there has been ongoing consultation with agencies and authorities throughout the EIS and SEIS development. Summary of consultation undertaken post EIS is summarised in SEIS Volume 4, Section 3.4.
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	These sections of the EIS do not address the requirements section 3.9 (subsection 3.9.3) of the ToR to provide details of the adopted assessment methodology in general accordance with the TMR Guidelines for Assessment of Road Impacts of Development – April 2006 (GARID).	The SEIS should provide details of how the draft assessment was performed in accordance with GARID, and describe the elements of the guidelines included and excluded in the EIS. Specific rationale(s) for exclusions are to be provided.	Vol 4, App W - Mine: Page 2-1, Section 2 'Scope and Methodology', Subsection 2.4 'Methodology' Vol 4, App AG - Rail: Page 2-1, Section 2 'Scope and Methodology', Subsection 2.4 'Methodology'	Comments regarding the ToR requirement for the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID).
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	These sections of the EIS do not address the requirements section 3.9 (subsection 3.9.3) of the ToR to provide details of the adopted assessment methodology in general accordance with the GARID, by referring to a superseded version of the Austroads guidelines (the Austroads Guide to Traffic Engineering Practice) and stating superseded daily traffic flow threshold values for corresponding level of service (LoS) criterion.	The SEIS should determine the mid-block performance of the road network consistent with the Austroads Guide to Traffic Management (AGTM) by: Providing threshold values for corresponding LoS criterion Expressing threshold volumes in terms of average annual daily traffic (AADT) (total two way flow).	Vol 4, App W - Mine: Page 2-3, Section 2 'Scope and Methodology', Subsection 2.4 'Methodology' and Table 2-3 'Performance Criteria of Rural Roads with Level Terrain' Vol 4, App AG - Rail: Page 2-3, Section 2 'Scope and Methodology', Subsection 2.4 'Methodology' and Table 2-3 'Performance Criteria of Rural Roads with Level Terrain'	Comments regarding the ToR requirement for the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID). An assessment of the traffic impacts to the local roads as a result of the Project has been undertaken and included in Volume 4, Appendix P (Traffic impact assessment report).
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	These sections of the EIS do not address the requirements section 3.9 (subsection 3.9.3) of the ToR to provide details of assessment assumptions.	The SEIS should provide details of the assessment assumptions. The GARID requirement is for all assumptions made in the assessment of intersection or network impacts to be clearly stated. These assumptions are to include those relating to: The forecast or anticipated traffic environment (i.e. changes due to road planning and road construction, changes to pavement condition, number and locations of access routes, and variations to flood immunity). Adopted or agreed aspects of the assessment in consultation with the relevant authorities and agencies. Factoring or normalisation of survey data to account for identified events during the survey period such as road closures or flooding. Traffic trends and information on relevant major developments relied upon to produce the 'without' and 'with' development traffic scenarios for each stage of the Project. Assumptions or data in relation to relevant major developments should include those identified in the Cumulative Impacts chapter Chapter 8) of the EIS. These projects include: Kevin's Corner Project South Galilee Coal Mine Project Goonyella to Abbot Point Rail Project Central Queensland Integrated Rail Project Abbot Point Coal Terminal 0 Project Dudgeon Point Coal Terminals Project.	Vol 4, App W - Mine: Page 2-3, Section 2 'Scope and Methodology', Subsection 2.4 'Methodology' Vol 4, App AG - Rail: Section 2 'Scope and Methodology', Subsection 2.5 'Assumptions and Limitations'	Comments regarding the ToR requirement for the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID).

38	QDTMR Central Region - Barcaldine Office	Transport	Description of existing situation	These sections of the EIS do not address requirements of section 3.9.1 of the ToR to provide sufficient information to allow an independent assessment of how existing infrastructure will be affected at the local and regional level. Table 3-1 in the mine assessment report is described as 'State-controlled roads in the Study Area' while local roads outside the jurisdiction of TMR are listed.	The SEIS should describe the assessed road network in a manner consistent with TMR and local government systems and terminology. These include: - TMR alphanumeric identifiers for each SCR - The specific type of multi-combination route (i.e. type 1 and type 2 road trains, 23 and 25 metre B-doubles) as detailed in the TMR Route Assessment Guidelines for Multi-Combination Vehicles in Queensland. - Adopted road hierarchy or classification system for local roads (i.e. collector, local access).	Vol 4, App W - Mine: Page 3-1, Section 3 'Description of Existing Situation', Subsection 3.1.1 'Existing Road Classification' and Table 3-1 'State Controlled Roads in the Study Area' Vol 4, App AG - Rail: Page 3-3, Section 3 'Description of Existing Situation', Subsection 3.1.1 'Classification of Roads' and Table 3-1 'State and Local Controlled Roads in the Study Area'	Comments regarding the ToR requirement for the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID).
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	These sections of the EIS do not address requirements of section 3.9.1 of the ToR to provide sufficient information to allow an independent assessment of how existing infrastructure will be affected at the local and regional level. Tables 3-1 in both reports limit local roads within the study area to those within the jurisdiction of the Isaac Regional Council (IRC). They are not consistent with Table 3-11 (mine report) Table 3-12 (rail report) and which indicate that local areas outside IRC boundaries, including the regional centres of Townsville and Mackay will potentially be impacted.	The SEIS should fully describe roads impacted by the Project for both its construction and operation phases, including local areas outside IRC boundaries. These are to include local roads within the regional centres of Townsville and Mackay	Vol 4, App W - Mine: Page 3-1, Section 3 'Description of Existing Situation', Subsection 3.1.1 'Existing Road Classification' and Table 3-1 'State Controlled Roads in the Study Area' Vol 4, App AG - Rail: Page 3-3, Section 3 'Description of Existing Situation', Subsection 3.1.1 'Classification of Roads', and Table 3-1 'State and Local Controlled Roads in the Study Area'	Comments regarding the ToR requirement for the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID).
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	These sections of the EIS do not address requirements of section 3.9.1 of the ToR to provide sufficient information to allow an independent assessment of how existing infrastructure will be affected at the local and regional level. These sections of the EIS do not address the requirements section 3.9 (subsection 3.9.3) of the ToR to adequately provide details of the adopted assessment methodology, in terms of pavements, in general accordance with the GARID – April 2006. This section simply states that the sealed pavement is in 'good condition' in all assessed roads.	The SEIS should better describe the existing state of pavement of the assessed SCRs as required by GARID – April 2006, including the description of overall condition, expected pavement life and planned maintenance expenditure.	Vol 4, App W - Mine: Pages 3-2 to 3-7, Section 3 'Description of Existing Situation', Subsection 3.1.2 'Description of Existing Road Conditions' Vol 4, App AG - Rail: Pages 3-4 to 3-9, Section 3 'Description of Existing Situation', Subsection 3.1.2 'Description of Existing Road Conditions'	The revised Traffic Impact Assessment (TIA) has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and provides the following information regarding the existing state of pavement on the SCRs. - Peak Downs Highway has a generally good quality sealed pavement over its entire length. - Flinders Highway (14A) - fully sealed - GDR is sealed across its length but to differing standards, e.g.. single lane seal versus full two lane seal. - Kilcummin-Diamond Downs Road - no pavement information No detailed pavement information provided
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	These sections of the EIS do not address requirements of section 3.9.1 of the ToR to provide sufficient information to allow an independent assessment of how existing infrastructure will be affected at the local and regional level. These sections of the EIS do not address the requirements section 3.9 (subsection 3.9.3) of the ToR to provide details of the adopted assessment methodology in general accordance with the GARID April 2006.	The SEIS should describe: - The rationale for the geographic extent of the local and regional road network (including rural two lane roads, multi lane roads, intersections and rail crossings) within the study area. This should be based on outcomes from stakeholder consultation, and the consideration of background traffic data and project traffic generation and distribution. It should also be consistent with the proponent's response to TMR's submission on Subsection 3.1.1 in relation to local roads affected by the Project. - The sources and survey dates of traffic data. For SCRs, traffic data is to include the latest available TMR Traffic Census. - The traffic count locations consistent with TMR Census terminology, including the TMR alphanumeric identifier for corresponding SCR segments.	Vol 4, App W - Mine: Page 3-7, Section 3 'Description of Existing Situation', Subsection 3.1.3 'Existing Traffic Volumes on State Controlled Roads' and Table 3-2 'Existing AADT Volumes on State-Controlled Roads' Vol 4, App AG - Rail: Page 3-9, Section 3 'Description of Existing Situation', Subsection 3.1.3 'Existing Traffic Volumes on State Controlled Roads' and Table 3-2 'Existing AADT Volumes on State-Controlled Roads'	Comments regarding the ToR requirement for the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID).

38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	These sections of the EIS do not address requirements of section 3.9.1 of the ToR to provide sufficient information to allow an independent assessment of how existing infrastructure will be affected at the local and regional level. These sections of the EIS do not address the requirements section 3.9 (subsection 3.9.3) of the ToR to provide details of the adopted assessment methodology in general accordance with the GARID – April 2006, by using an capacity analysis method contained in a superseded version of the Austroads guidelines. The methodology in Austroads AGTM should be adopted.	The SEIS should provide details of the assessment methodology of the existing road network in terms of: The assessment year(s) of the capacity analysis and the rationale for their adoption (i.e. concurrency with the cumulative peak construction and operational activity of both components of the Project) Adopted threshold AADT (total two way flow) values for corresponding LoS criterion for mid-block capacity in accordance with the AGTM. Capacity analysis of rural two lane roads, multi-lane roads, intersections and rail crossings in accordance with the AGTM.	Vol 4, App W - Mine: Page 3-8, Section 3 'Description of Existing Situation', Subsection 3.1.6 'Roadway Capacity for Two-Lane Two-Way Rural Roads' and Table 3-4 'Road Network Capacity Assessment of Existing Network' Vol 4, App AG - Rail: Page 3-8, Section 3 'Description of Existing Situation', Subsection 3.1.5 'Roadway Capacity for Two-Lane Two-Way Rural Roads' and Table 3-4 'Existing Road Network Capacity Assessment'	Comments regarding the ToR requirement for the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID).
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	These sections of the EIS do not address requirements of section 3.9.1 of the ToR to provide sufficient information to allow an independent assessment of how existing infrastructure will be affected at the local and regional level. These sections of the EIS do not address the requirements section 3.9 (subsection 3.9.3) of the ToR to provide details of the adopted assessment methodology in general accordance with the GARID, by omitting the crash data assessment methodology as specified in the guideline.	The SEIS should describe the crash history in a manner consistent with TMR and local government systems and terminology, and provide additional context in terms of location. These descriptors include: TMR alphanumeric identifiers for SCRs Locations of crashes in relation to proposed Project transport routes and access points. Normalised crash data in terms of crash rates by vehicle–kilometres travelled (VKT) for mid block sections and by vehicle throughput for intersections in accordance with the GARID.	Vol 4, App W - Mine: Pages 3-9 to 3-14, Section 3 'Description of Existing Situation', Subsection 3.1.6 'Crash History' Vol 4, App AG - Rail: Pages 3-12 to 3-17 ,Section 3 'Description of Existing Situation', Subsection 3.1.7 'Crash History'	The revised Traffic Impact Assessment (TIA) has been undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). The traffic count and crash data that is presented in the TIA is the latest data (received July 2013) and it has been acquired from DTMR or from other reports as defined by each of the references. Therefore crash history has been described in a manner consistent with DTMR terminology and has been presented in accordance with GARID. The TIA also provides information regarding the location of crashed in relation to the proposed Project transport routes.
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	These sections of the EIS do not address requirements of section 3.9.2 of the ToR to provide details of: Expected volumes of project inputs and outputs of transported raw materials, wastes, hazardous goods, finished products. How identified project inputs and outputs will be moved through the transport network (volume, composition, trip timing, routes and haulage of materials). Traffic generated by construction and operational workforce personnel including visitors (volume, composition, timing and routes) and likely accommodation. Likely heavy and oversize/indivisible loads (volume, composition, timing and routes).	The SEIS should provide information (and assumptions adopted and methodology used where applicable) on traffic associated with the Project in accordance with the GARID. This includes for the respective assessment horizons for both components (mine and rail): Types of trips, such as drop in or diverted trips between the Project components' construction and accommodation sites, and visitor trips. Proportion of trips assigned to bus and rail trips and to walk/cycle modes. Total Project traffic generation by Austroads classification, plus identification of demands associated with heavy and versize/indivisible loads, transported raw materials, wastes, hazardous goods, and finished products. Temporal distribution of trips, taking into account potential seasonal variation and workforce rosters. Trip distribution to/from the surrounding road network (by origin, destination and route).	Vol 4, App W - Mine: Pages 4-1 to 7-4, Section 4 'Proposed Construction Arrangement', Section 5 'Mine Operation Activities', Section 6 'Impact Assessment – Mine Operation', Section 7 'Impact Assessment – Mine Operation' Vol 4, App AG - Rail: Pages 4-1 to 7-6, Section 4 'Proposed Construction Arrangement', Section 5 'Rail Operations', Section 6 'Impact Assessment and Mitigation Measures – Construction Phase', Section 7 'Impact Assessment and Mitigation Measures – Operation Phase	Comments regarding the ToR requirement for the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID).
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	These sections of the EIS do not address the requirements of section 3.9 (subsection 3.9.3) of the ToR to provide details of the adopted assessment methodology in general accordance with the GARID, by referring to a superseded version of the Austroads guidelines (the Austroads Guide to Traffic Engineering Practice) and stating superseded daily traffic flow threshold values for corresponding level of service (LoS) criterion, and assessing the impacts of the Project on a past year.	The SEIS should determine 'with development' performance of the road network consistent with the Austroads AGTM by providing: Mid-block capacity assessment outcomes in terms of the correct/updated assessment year and threshold values for corresponding LoS criterion Capacity analysis results for rural roads, multi lane roads, intersections and rail crossings as determined by the proponent's response to TMR's submission in relation to Subsection 3.1.1 and Subsection 3.1.3.	Vol 4, App W - Mine: Page 6-3, Section 6 'Impact Assessment – Mine Construction', Subsection 6.3.2 'Impact of Construction on State Controlled Road Network' and Table 6-3 'Construction Traffic Impact on State Controlled Roads (2012)' Vol 4, App AG - Rail: Page 6-4, Section 6 'Impact Assessment and Mitigation Measures – Construction Phase', Subsection 6.4.1 'Impact of Construction on State Controlled Road Network' and Table 6-3 'Construction Traffic Impact on State Controlled Roads (2012)'	Comments regarding the ToR requirement for the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID).

38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	This section of the EIS does not address the requirements in section 3.9 (subsection 3.9.3) of the ToR to provide details of the adopted assessment methodology in general accordance with the GARID, by referring to a superseded version of the Austroads guidelines (the Austroads Guide to Traffic Engineering Practice) and stating superseded daily traffic flow threshold values for corresponding level of service (LoS) criterion.	The SEIS should determine the 'with development' performance of the road network consistent with the Austroads AGTM by: - Mid-block capacity assessment outcomes in terms of the correct/updated threshold values for corresponding LoS criterion - Capacity analysis results for rural roads, multi lane roads, intersections and rail crossings as determined by the proponent's response to TMR's submission in relation to Subsection 3.1.1 and Subsection 3.1.3.	Vol 4, App W - Mine: Page 7-4, Section 7 'Impact Assessment – Mine Operation', Subsection 7.3.2 'Impact of Operation on State Controlled Road Network' and Table 7-3 'Construction Traffic Impact on State Controlled Roads (2025+)' Vol 4, App AG - Rail: (not in submission)	Comments regarding the ToR requirement for the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID).
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	These sections of the EIS do not address requirements of section 3.9.3 of the ToR to provide details of the Project's impacts on: - Capacity, safety, efficiency and condition of transport operations, services and assets (from either transport or project operations) - Any other proposed rail projects in the vicinity of the subject proposal - Possible interruptions to transport operations - Possible impacts on the existing road network from building the proposed rail - Infrastructure (e.g. from haulage of construction inputs) - Road safety and efficiency due to where and how rail crossings will be built - The natural environment within the jurisdiction of an affected transport authority (e.g. road and rail corridors) - The nature and likelihood of product-spill during transport if relevant - Driver fatigue for workers travelling to and from regional centres and key destinations - Any existing or proposed strategies for public passenger transport and active transport and address, where relevant, requirements of Part 2A of the Transport Planning and Coordination Act 1994 - Access to transport for people with a disability if applicable.	The SEIS should determine the 'with development' impacts on the road network by the Project consistent with the GARID and Austroads AGTM by: - Providing mid-block capacity assessment outcomes in terms of the correct/updated threshold values for corresponding LoS criterion - Determining impacts to network performance (rural roads, multi lane roads, intersections and rail crossings) as determined by the proponent's response to TMR's submission in relation to Subsection 3.1.1 and Subsection 3.1.3. - Identifying potential safety issues for road users, including pedestrians, cyclists and public transport patrons at roadways, intersections and rail crossings. - Determining potential impacts to pavement and bridge/culvert structures. - Identifying residual flood immunity issues. - Determining requisite changes to the transport network and planning. - Determining risks associated with product spill and driver fatigue. - Identifying potential impacts to strategies for public passenger transport and active transport (rather than identifying bus routes). - Determining impacts for access to transport for people with a disability. The proponent should also provide traffic and other transport data based on the attached proforma (an Excel spreadsheet). This will help ensure all key estimated transport information is consistently provided. This will also allow cumulative impacts of major development projects to be more easily assessed and addressed, and for ease of identifying and comparing with current DTMR data. P:\1 PP&MP\DTMR Traffic generation info	Vol 4, App W - Mine: Pages 4-1 to 8-3, Section 4 'Proposed Construction Arrangement' , Section 5 'Mine Operation Activities', Section 6 'Impact Assessment – Mine Operation', Section 7 'Impact Assessment – Mine Operation', Section 8 'Conclusion' Vol 4, App AG - Rail: Pages 4-1 to 8-2, Section 4 'Proposed Construction Arrangement' , Section 5 'Rail Operations', Section 6 'Impact Assessment and Mitigation Measures – Construction Phase', Section 7 'Impact Assessment and Mitigation Measures – Operation Phase', Section 8 'Conclusion	Comments regarding the ToR requirement for the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID).
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	These sections of the EIS do not address requirements of section 3.9.4 of the ToR to provide details of required infrastructure in relation to: - Any proposed alterations or new transportrelated infrastructure and services required by the Project (as distinct from impact mitigation works) - Construction of any project-related plant and utilities, within or impacting on the jurisdiction of any transport authority - Requirements to upgrade existing level crossings due to increased project traffic during both the construction and operations phases of the project including community indirect costs and benefits and later staged upgrading requirements over the life of the mine.	The SEIS should determine the required transport alterations as stated in section 3.9.4 of the ToR by the Project in terms of consistency with TMR plans, and described under the following categories (refer to Section 9 of the GARID): - Category 1 - consistent with TMR plans - Category 2 - consistent with TMR plans but not timing - Category 3 - consistent with TMR plans and timing, but scope or scale of works is different - Category 4 - inconsistent with TMR plans In identified instances where the required mitigation measures include infrastructure works which are unlikely to have ever been provided in the absence of the Project, or the estimation of the timing of the works is regarded as too speculative, the capital cost and maintenance cost of the works are to be calculated as per the methodology contained in section 9 of the GARID-2006. The reason of this requirement is to allow the consolidation of identified impacts and the review of the types of treatments and/or measures required to address these impacts, including costing of mitigation treatments and funding arrangements. This would allow TMR to assess the basis as to: - What additional road works or mitigation measures are required to accommodate the proposed development impacts on the SCR network; and - Whether TMR has the road works and associated infrastructure required by the Project in the first two years of its program of works (contained in the Queensland Transport and Roads Investment Program (QTRIP)). However, if no works are programmed, then the proponent will need to propose mitigation treatments that enable TMR to meet its legislative obligations whilst allowing the Project to proceed.	Vol 4, App W - Mine: Pages 4-1 to 7-4, Section 4 'Proposed Construction Arrangement', Section 5 'Mine Operation Activities', Section 6 'Impact Assessment – Mine Operation', Section 7 'Impact Assessment – Mine Operation', Section 8 'Conclusion' Vol 4, App AG - Rail: Pages 4-1 to 8-2, Section 4 'Proposed Construction Arrangement', Section 5 'Rail Operations' , Section 6 'Impact Assessment and Mitigation Measures – Construction Phase', Section 7 'Impact Assessment and Mitigation Measures – Operation Phase', Section 8 'Conclusion	Comments regarding the ToR requirement for the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID).

38	QDTMR Central Region - Barcaldine Office	Transport	Hazard and Risk	These sections of the EIS do not address requirements of section 6.1 of the ToR to: - Describe the potential hazards and risks to people and property that may be associated with the project, which may include but are not restricted to Identifying potential hazards, accidents, spillages and abnormal events that may occur during all stages of the project, including possible frequency of occurrence - Identify all hazardous substances to be used, stored, processed or produced and the rate of usage. - Perform a preliminary risk assessment for all components of the project undertaken as part of the EIS process in accordance with Australia/New Zealand AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines. - To deal comprehensively with external and onsite risks including transport risks	The EIS should include a preliminary risk assessment and risk management plan for aspects of the Project associated with transport activities and infrastructure, as stated in section 6.1 of the ToR. The preliminary risk assessment and risk management plan should consider the cumulative and/or consequential hazards, factors and impacts of both mine and rail components of the Project. These include but are not limited to: - Transport elements of Project changing in scope, scale or timing, i.e. delay or removal of the airport proposal. - Increase in traffic movements and heavy to light vehicle ratio due to the Project, i.e. vulnerable LGRs and SCRs with pavements/bridges or road shoulders may not be designed for unexpected sudden increases in seasonal heavy vehicle traffic - leading to higher road maintenance costs and funding shortfalls.	Vol 4, App W - Mine: Page 1-1, Section 1 'Introduction' Subsection 1.1 'Project Overview' and subsection 1.2 'Study Area' Vol 4, App AG - Rail: Pages 1-1 to 1-3, Section 1 'Introduction	Comments regarding hazard and risk associated with the Projects transport activities and infrastructure have been noted. The revised Traffic Impact Assessment (TIA) has been undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). The TIA assesses the potential hazards and risks arising from roads and traffic related to the projects construction and operational phases. Hazards and risks are further assessed for the Project in the EIS, Volume 2, Chapter 12 – Hazard and Risk and Volume 3, Chapter 12 – Hazard and Risk. As identified in the TIA traffic management issues will be addressed through the preparation and implementation of construction and operation Traffic Management Plans. These will be developed during the detailed design phase of the Project in consultation with the DTMR, QPS and local authorities.
38	QDTMR Central Region - Barcaldine Office	Transport	Hazard and Risk	- Assess risks during the construction, operational and decommissioning phases of the project - Analyse the consequences of each hazard on safety in the project area and examine the likelihood of both individual and collective consequences, involving injuries and fatalities to workers and to the public. - Present quantitative levels of risks. - Provide details on the safeguards that would reduce the likelihood and severity of hazards, consequences and risks to persons, within and adjacent to the project area(s). - Present a comparison of assessed and mitigated risks with acceptable risk criteria for land uses in and adjacent to the project area(s). - Provide a risk management plan.	- Transport of Project people, materials and equipment, i.e. impacts associated with the interaction of heavy vehicles with general traffic and other road users at intersections (chiefly highway entry and exit points), and passing space may not be sufficient on local government roads (LGRs) for heavy vehicles. - Wet weather and flooding - Immediate amenity impacts causing community complaints to government, such as dust and noise generated by Project vehicles Please note: These comments have been made in relation to other sections of the EIS, but may be better addressed in the transport section.	Vol 4, App W - Mine: Page 1-1, Section 1 'Introduction' Subsection 1.1 'Project Overview' and subsection, 1.2 'Study Area' Vol 4, App AG - Rail: Pages 1-1 to 1-3, Section 1 'Introduction	Comments regarding hazard and risk associated with the Projects transport activities and infrastructure have been noted. The revised Traffic Impact Assessment (TIA) has been undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). The TIA assesses the potential hazards and risks arising from roads and traffic related to the projects construction and operational phases. Hazards and risks are further assessed for the Project in the EIS, Volume 2, Chapter 12 – Hazard and Risk and Volume 3, Chapter 12 – Hazard and Risk. As identified in the TIA traffic management issues will be addressed through the preparation and implementation of construction and operation Traffic Management Plans. These will be developed during the detailed design phase of the Project in consultation with the DTMR, QPS and local authorities.
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	This section identifies the local government roads that are to be used to access the site, although once these roads intersect with the Gregory Developmental Road, the remaining routes on the state-controlled road network are not identified.	The proponent is requested to provide details in the SEIS of all of the state-controlled network that will be used by the project generated traffic to access the site.	Volume 1, Section 2 Description of the Project, Subsection 2.3 Project (Mine), Page 2-3	The revised Traffic Impact Assessment (TIA) has been undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). This TIA provides further information on the following SCRs that will be used by the Project generated traffic: - Peak Downs Highway - Flinders Highway - GDR - Kilcummin-Diamond Downs Road
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	This section identifies that project-generated traffic will be originating from Townsville and Mackay. No estimates have been provided regarding the traffic volumes and types that are likely to be travelling on these state-controlled roads.	The proponent is requested to provide estimates in the SEIS of all traffic volumes and types that will be utilising the state-controlled road network from trip origins to trip destinations.	Volume 1, Section 3 Social Impact Assessment, Subsection 3.3.6 Roads, Traffic and Safety, Page 3-20	The revised Traffic Impact Assessment (TIA) has been undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). This TIA provides further information on the traffic volumes on the SCR network from trip origins and destinations.
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	This section identifies that the Peak Downs Highway and the Flinders Highway will be affected by project generated traffic, but does not include any traffic estimates or types for these road sections.	The proponent is requested to provide estimates in the SEIS of the traffic volumes and types that will occur on these roads from project generated trips. Analysis of this information is to be provided along with any mitigation strategies and requirements that are determined from the analysis.	Volume 1, Section 8 Cumulative Impacts, Subsection 8.3.7 Traffic and Transport, Page 8-29	Comments regarding PDH and FH have been noted. Requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	This section provides estimates of volumes of heavy vehicle (truck) trips on the external road network. More specific information is required in terms of how many vehicles are expected to travel on each of the road segments that will be affected by the mining proposal.	The proponent is requested to provide details in the SEIS of the traffic volumes and types that will travel on the affected segments of the road network. Peak hour traffic volumes also need to be provided as part of this information. Light vehicle movements also need to be accounted for as these will affect the level of service of road segments.	Volume 2, Section 11 Transport, Subsection 11.3.2.1 Construction Activity and Volume 3, Section 11 Transport, Subsection 11.3.2.1 Construction Activity Page 11-20 Page 11-19	Comments regarding traffic volume data has been noted. Requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	This section provides the daily vehicle traffic for the operations phase of the project. This information needs to be broken down further to provide the peak hour traffic information, including the vehicle numbers broken into the relevant Austroads vehicle classifications.	The proponent is requested to provide in the SEIS the peak hour traffic volumes and also provide the volumes for each Austroads vehicle classification.	Volume 2, Section 11 Transport, Subsection 11.3.3.2 Mine Operation Staging, Page 11-25	Comments regarding peak hour traffic volume data has been noted. Requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	The Transport Section of the EIS does not include specific information or volumes on excess mass and/or excess dimension vehicles transporting goods and equipment to and from the site via the state-controlled road network.	The proponent is requested to provide in the SEIS information relating to the volumes of excess mass and/or excess dimension vehicles, the routes that are intended to be taken for each load or load type, the timing of these loads and the escorting requirements that the proponent has identified for the proposed loads.	Volume 2, Section 11 Transport	Comments regarding impacts of excess mass and/or excess dimension vehicles transporting goods and equipment to and from the site via the state-controlled road network has been noted. Requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). There has been ongoing consultation with DTMR in regards to these future requirements.
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	This section of the EIS does not include specific information regarding the peak hour traffic volumes expected to be experienced on the road network.	The proponent is requested to provide in the SEIS estimates of peak hour traffic volumes during the peak traffic year(s) for all roads that will be affected by project generated traffic.	Volume 4 - Appendix W Mine Transport Assessment and Appendix AG Rail Transport Assessment	Comments regarding peak hour traffic volume data has been noted. Requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	This section of the EIS makes little effort to include information regarding the number and size or weight of excess mass and/or excess dimension vehicles travelling to and from the project site via the statecontrolled road network.	The proponent is requested to provide in the SEIS details of the number, type, size/weight and travel route (i.e.: which roads are affected) for excess mass and/or excess dimension vehicles that will be travelling to and from the project site.	Volume 4 - Appendix W Mine Transport Assessment and Appendix AG Rail Transport Assessment	Comments regarding impacts of excess mass and/or excess dimension vehicles transporting goods and equipment to and from the site via the state-controlled road network has been noted. Requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). There has been ongoing consultation with DTMR in regards to these future requirements. Information regarding escorting requirements
38	QDTMR Central Region - Barcaldine Office	Transport	Road Impact Assessment	This section of the EIS references the Logistics Report (GHD 2012) but does not include this in the EIS.	The proponent is requested to include the referenced Logistics Report in the SEIS Appendix.	Volume 4 - Appendix W Mine Transport Assessment and Appendix AG Rail Transport Assessment	An updated Traffic Impact Assessment is provided in the SEIS (Volume 4 Appendix P). This includes details on logistics. Further to this, the EIS Transport Report contained all relevant information from the Logistics Report referred to in the submission.
38	QDTMR Northern Region - Townsville	Transport	Consultation	North Queensland Region has major concerns over the content and quality of the Environmental Impact Statement (EIS) Transport Reports. There are many omissions and this response only touches on some key matters arising from those reports.	In preparing the Supplementary EIS (SEIS), it is recommended that the traffic consultants work closely with Department of Transport and Main Roads (TMR) regional offices to ensure that the supplementary transport reports meet TMR's requirements.	Volume 4 - Appendix W Mine Transport Assessment and Appendix AG Rail Transport Assessment	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment)

38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	The numbers of haul vehicles and rail volumes stated in the Transport Reports are so high that the proponent should demonstrate the ability of the road transport industry to support these transport tasks.	The SEIS should include evidence of available resources for the project Rail and Mine such as employee availability, dedicated heavy vehicles, port capacity for imports and rail capacity should be fully articulated in the supplementary transport reports.	Volume 4 - Appendix W Mine Transport Assessment and Appendix AG Rail Transport Assessment	Noted. A revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) will provide clarity on the scale of vehicles requirements which are significantly reduced from the initial EIS estimates.
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Both Transport Reports (Mine and Rail) carry a disclaimer expressly disclaiming responsibility for any errors or omissions in the report or reliance on the Report by a third party. The purpose of the Reports is to enable TMR to make a reasonable assessment of the transport impacts of the projects.	The SEIS should include Transport Reports which are certified by a suitably qualified RPEQ (transport) in accordance with the below requirements and able to be relied on by TMR in the assessment of the proposed Project (Rail) and (Mine). The material provided expressly excludes reliance by TMR on the information contained.	Volume 4 - Appendix W Mine Transport Assessment and Appendix AG Rail Transport Assessment	Certification of the transport reports was not a requirement under the ToR. An updated Traffic Impact Assessment is provided in the SEIS (Volume 4 Appendix P) and was prepared by a specialist Transport consultant in accordance with DTMR requirements.
38	QDTMR Northern Region - Townsville	Transport	Hazard and Risk	No strategies for evacuation when roads or rail are inundated by flooding have been identified. Given the number of employees indicated, such a strategy and evacuation routes need to be developed.	Suitable evacuation strategies from mine and camps need to evaluated and documented. The site area is known for flooding and evacuation of mine and construction workers during these events may be required over the life of the project.	Volume 4 - Appendix W Mine Transport Assessment and Appendix AG Rail Transport Assessment	The Hazard and Risk Assessments undertaken in the EIS consider the requirements for evacuations. In addition, the design criteria for roads and rail are consistent with the required engineering standards to ensure access during flooding events up to and include design criteria for roads and rail. Events over and above these agreed design criteria (approved by agencies including DTMR) will create regional access challenges. Evacuation procedures and plans will be implemented that accommodate a range of scenarios. Adani will develop a Disaster Management Plan in consultation with emergency service providers, as required, prior to commencement of work onsite (SEIS Volume 4, Appendix G Project Commitments Register, Section 2.2.11). The Disaster Management Plan would include evacuation procedures and plans for flooding and other scenarios such as fire.
38	QDTMR Northern Region - Townsville	Transport	Hazard and Risk	Camps and the mine site are situated in a possible flood area. It appears that no consideration has been given to providing additional flood warning stations in relation to the Project (Rail).	The SEIS should indicate where, if any, flood warning stations in relation to road and rail are required, showing investigation data and review undertaken. The proposed new rail line crosses Transport Corridor 2. Provision of a flood warning station south of Moray Downs should be considered.	Volume 4 - Appendix W Mine Transport Assessment and Appendix AG Rail Transport Assessment	Adani has made a commitment to install meteorological monitoring stations, and flow gauging stations on the key watercourses that would affect flooding in proximity to the Mine and Offsite Infrastructure. Further details are included in the SEIS Volume 4 Appendix K3. Adani will consider requirements to provide further regional flood warning capacity.
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	The Transport Report has not been prepared in accordance with TMR's policy and guidelines. Whilst reference is made to TMR's "Guidelines for Assessment of Road Impacts of Development" (GARID) it has not been followed. If it had, the information required by TMR to make a reasonable assessment of the proposed development would have been provided.	The SEIS must include an adequate Road Impact Assessment (RIA) with respect to both Mine and Rail. The RIA must be prepared in accordance with GARID and be based on the best estimates of project-related traffic that are available at this stage. This should include assessment of cumulative impacts relating to: a) traffic operation (midblock & intersection performances, drop off/collection, capacity) b) road safety analysis (including rail crossings) c) pavement, bridge and culvert impacts (to be based on equivalent standard axles for heavy vehicle component) d) changes to road network e) noise and hydrology f) mitigation strategies (for example any monetary contribution for bring forward maintenance and rehabilitation, intersection upgrades, overtaking opportunities, pavement upgrades, shoulder widening, bridge widening) An adequately prepared RIA ensures that matters relating to capacity, safety, efficiency and condition of transport operations, services and assets are appropriately assessed and mitigation measures identified. TMR responded to the draft Terms or Reference on 17 March, 2012 and required a RIA in accordance with GARID. GHD's Transport Reports prepared for the Carmichael Coal Mine and Rail Project have failed to fully address TMR's requirements.	Vol 4, Appendix AG, PROJECT (Rail) Transport Report 25215-D-RP-0016 generally	Comments regarding the transport assessment to be in accordance with the DTMR's Guidelines for Assessment of Road Impacts of Development (GARID). A revised Traffic Impact Assessment has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and is consistent with the requirements of Queensland Transport and Main Roads' (DTMR's) Guidelines for Assessment of Road Impacts of Development (GARID).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment		An adequately prepared RIA ensures that matters relating to capacity, safety, efficiency and condition of transport operations, services and assets are appropriately assessed and mitigation measures identified. TMR responded to the draft Terms or Reference on 17 March, 2012 and required a RIA in accordance with GARID. GHD's Transport Reports prepared for the Carmichael Coal Mine and Rail Project have failed to fully address TMR's requirements.	Vol 4, Appendix AG, PROJECT (Rail) Transport Report 25215-D-RP-0016 generally	An assessment of the traffic impacts to the local roads as a result of the Project has been undertaken and included in Volume 4, Appendix P Traffic impact assessment report).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	The Transport Report does not provide adequate assessment of, or recommended mitigation measures required to address the impacts of the proposed Rail and Mine project on the State transport network arising from the four components of the project.	In the RIA included in the SEIS, fully assess the individual and cumulative impacts and proposed mitigation measures required for the four components of the project: a) Rail construction b) Mine Construction c) Mine Camp Construction d) Mine Operation Provide best current estimates of origin and destination, quantities of material hauled (for example, ballast, fill, rail, construction and accommodation infrastructure), types of vehicles, numbers of each vehicle type, equivalent standard axles, trips, workers camps, workers transport, support vehicles, transport modes and pickup/drop off localities, routes, intersections, train movements, track type locations, rail crossing impacts, hydrology and mitigation measures. The Transport Report reviews construction of the rail component of this development separate from construction of mine and mine operation. In order to assess the proposal, TMR requires an RIA showing the cumulative impact relating to all four components of the project, that is rail construction, mine construction, mine camp construction and mine operation.	Vol 4, Appendix AG PROJECT (Rail) Transport Report 25215-D-RP-0016 generally	Refer to comments for issue 38AI An assessment of the traffic impacts to the local roads as a result of the Project has been undertaken and included in Volume 4, Appendix P Traffic impact assessment report).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Traffic volumes including AADT are out of date. The figures quoted throughout the Transport Report appear to be 4 to 5 years old and have not been updated.	In the RIA in the SEIS, use current traffic volumes – these can be obtained by contacting the Regional offices of TMR to obtain a copy of their latest traffic census data. Utilisation of old figures will disproportionally increase the impact of the proposed development on the State transport network	Vol 4, Appendix AG, PROJECT (Rail) Transport Report 25215-D-RP-0016 generally	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment)

38	QDTMR Northern Region - Townsville	Transport	Access points	Access locations for mine and rail construction works and camps have not been identified.	In the SEIS, identify, analyse and provide mitigation strategies of all accesses, including proposed location and required configuration/standard.	Vol 4, Appendix AG, PROJECT (Rail) Transport Report 25215-D-RP-0016 generally	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) Access points including roads were provided in the EIS through the MCU application material under Volume 4 Appendix D. The requested information has been included within a number of SEIS sections (Volume 3 Section 2, Volume 4 C1 through C5)
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Population data is out of date. The figures quoted do not reflect current census counts. Accordingly, there are likely to be environmental and safety issues (noise and so on) which my have a greater impact on residential populations	In the SEIS, include current population and demographic information – review and provide an updated report on all areas that may be materially affected by the changed data. Population densities are relevant to social, environmental and safety analysis.	Vol 4, Appendix AG, PROJECT (Rail) Transport Report 25215-D-RP-0016 generally	Noted. A revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Road crossings	With the connections to Abbott Point via the Newlands System, the number of train trips each way required by the project will affect the safety and capacity of the level crossings on the Bowen Developmental Road.	Within the amended RIA included in the SEIS, assess potential impacts and recommend appropriate mitigation strategies for road/rail crossings. The crossings on the Bowen Development Road (TMR ref 88A) Chainage (Ch) 18.38km, Ch 32.59km and Ch 53.17km have already been speed restricted when train and road traffic volumes increased over the last few years, as sight distance requirements for road trains are not met. This speed restriction is not consistent with the road environment and will not be a suitable mitigation treatment in the future with increasing rail and road traffic volumes.	Vol 4, Appendix AG, PROJECT (Rail) Transport Report 25215-D-RP-0016 Section 5	Noted. A revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). This TIA concluded that the construction of level crossings along the route could result in potential conflicts between rail and road traffic that will need to be managed by installing appropriate safety warning measures. Adani will consult with DTMR to establish how these impacts should be managed and to identify agreed mitigation measures. Further to the above, Adani will incorporate mitigation measures for the road/rail crossings through the development of a construction traffic management plan. This commitment is provided in SEIS Volume 4, Appendix G, section 2.3.10.
38	QDTMR Northern Region - Townsville	Transport	Road crossings	The project will result in a 170% increase in tonnage hauled on this line and a similar increase in train movements and impacts.	In the SEIS, provide ALCAM assessments for all level crossings on the project and all downstream level crossings impacted by trains servicing the project to assess the safety impact of the increase in train traffic. Upgrades to the level crossings on the Bowen Developmental Road and replacement by grade separated crossings needs to be considered	Vol 4, Appendix AG, PROJECT (Rail) Transport Report 25215-D-RP-0016 Section 5	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment)
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	The identified vehicle movements indicate very large increases in heavy vehicle traffic (e.g. Gregory Developmental Road (TMR Ref 98B) at Cape River 220% increase in heavy vehicles using the 2 year average) on the Flinders Hwy and Gregory Developmental Roads. These increases may exceed the safe operational capacity of some infrastructure. As an example Cape River bridge is currently 6.1m wide. This is sufficient for single lane operation on existing volumes. With the proposed traffic increase, the recommended width for single lane operation will become 6.25m and that for 2 way operation 8.5m. There are 13 bridges in total with a width of less than 8.0m on the haul route from Townsville, 7 of these including Cape River are 6.8m wide or less. Similarly 64km of road is less than 6.4m wide, however the pavement in these sections is generally over 8.5m therefore requiring wider seal treatment to accommodate the volumes. Soft treatments such as reducing the speed limit from 100km/hr to 60km/hr for 2 years are not realistic given other road users efficiency requirements.	In the RIA included in the SEIS, provide analysis and mitigation strategies for operational capacity in the road network including, for example, bridges, overtaking opportunities, carriage widths and culverts.	Vol 4, Appendix AG , PROJECT (Rail) Transport Report 25215-D-RP-0016, Section 6	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment)
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	The Bruce Highway is not listed in this table but is listed section 11.2.1.4 – Crash History – being identified as a “DTMR roads impacted by the Project” (page 11-7).	Should the Bruce Highway be listed in Table 11-3 – State Controlled Road in the Study Area?	Vol 2, Section 11 Table 11-3 State Controlled Roads in the Study Area, Page 11-3	Noted. A revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). The Bruce highway is listed in this report as the crash data from DTMR s for the Peak Downs Highway, between the Gregory Developmental Road and Bruce Highway (about 270 km in length).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Population Size column Are the population figures included in the Population Size column “current” figures? E.g. Qld Statistician population estimates for the Mackay and Townsville LGAs as at 30th June 2011 are 115,677 and 180,389 respectively.	Clarify/correct figures in the SEIS.	Vol 2, Section 11 Table 11-7, Townships Potentially Impacted During Construction Page 11-7	Noted. A revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Airports	Townsville (International) Airport is listed as being in the Central Queensland region. Townsville is normally identified as being in the North Queensland region.	Correct in the SEIS.	Vol 2, Section 11 11.2.4 Existing Airport Facilities	Comments are noted.
38	QDTMR Northern Region - Townsville	Transport	School bus routes	This section states that ‘Local school buses operate in the area servicing schools at Moranbah and Clermont; these buses generally operate on local roads and the Peak Downs Highway.” Section 3.5 School and Public Transport Services of the EIS makes the same statement. No data/information is provided in relation to these services.	In the SEIS, provide further information at to the number of school buses and the routes (current and projected) they utilise, in order to determine whether the vehicle movements generated by the proposed development will significantly impact on the operations/safety levels of those bus services.	Vol 2, Section 11 11.2.5 School and Public Transport Services	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). The Road Use Management Plan will consider impacts on school bus routes (SEIS Volume 4, Appendix G, Project Commitments Register, R10.1).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	The Bruce Highway is not listed in this table but is listed section 11.2.1.4 – Crash History – being identified as a “DTMR roads impacted by the Project” (page 11-7).	Should the Bruce Highway be listed in Table 11-19 – State Controlled Road in the Study Area? Clarify in the SEIS.	Vol 2, Section 11 Table 11-19 State Controlled Roads in the Study Area Page 11- 27	Noted. A revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). The Bruce highway is listed in this report as the crash data from DTMR s for the Peak Downs Highway, between the Gregory Developmental Road and Bruce Highway (about 270 km in length).
38	QDTMR Northern Region - Townsville	Transport	School bus routes	This section states that “haulage routes for the project may overlap with school bus routes. However given the relatively low number of school bus services, townships situated along the routes, and the likely short period of time of operation within the day, it is expected that there would be negligible impact on the safe operation of current school bus services.”	In the SEIS, provide further information about the number of school buses and the routes (current and projected) they use in order to determine whether the vehicle movements generated by the proposed development will significantly impact on the operations/safety levels of those bus services and pedestrian movements at bus stops.	Volume 2 section 11 11.3.5.5 Impact on School Bus Routes	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). The Road use Management Plan will consider impacts on school bus routes (SEIS Volume 4, Appendix G, Project Commitments Register, R10.1).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Performance Criteria of Level of Service (LOS) has been identified and is used as the sole assessment methodology for road capacity. Table 11.3 assumes all roads are Rural Roads whereas 11.5 provides various classifications. Where LOS is intended to show levels of capacity impact – the classification of each road section must be clearly identified and assessed against that capacity criteria.	Clarify/correct figures in the SEIS. LOS is a midblock capacity measure only and does not investigate the capacity performance of intersections (including roundabouts) or rail crossings	Volume 3 section 11 Section 11.1 and Table 11.3	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment)

38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Little or no assessment of intersection performance has been undertaken.	In the SEIS, provide SIDRA analysis of all key State-controlled road intersections impacted by the proposed development (for all 4 components, rail, rail construction camps, mine and mine camp) adopting SIDRA model parameters. LOS is a midblock capacity measure only and does not investigate the capacity performance of intersections (including roundabouts) or rail crossings	Volume 3 section 11 Section 11.1 and Table 11.3	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment)
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Gregory Developmental Road (Charters Towers to Belyando Crossing) is identified as 98A. Gregory Developmental Road (Charters Towers to Belyando Crossing) should be 98B.	Correct in the SEIS.	Vol 3, section 11 Table 11-13 Construction Traffic Impact on State Controlled Roads Page 11-25	Comments are noted.
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Description of existing road conditions indicates all State-controlled roads are in good condition.	The SEIS must include an initial pavement impact assessment to: - Support statement of 'sealed pavement in good condition'. - Provide network analysis and mitigation strategies for unsealed sections (if any). - Provide data analysis and establish that the Transport Corridor Options are of appropriate pavement width and provide overtaking opportunities to mitigate proposed volumes. The Transport Report has identified all Statecontrolled road pavements are in good condition without supporting information. Given the flood events in 2010, 2011, 2012 and 2013 there are known areas of pavement stress. Given the projected volumes of the overall project, a full pavement impact assessment is required	Vol 3, section 11 Section 11.2.2.2 Existing Road Conditions	The revised Traffic Impact Assessment (TIA) has been undertaken for the project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) and provides the following information regarding the existing state of pavement on the SCRs. - Peak Downs Highway has a generally good quality sealed pavement over its entire length. - Flinders Highway (14A) - fully sealed - GDR is sealed across its length but to differing standards, e.g.. single lane seal versus full two lane seal. - Kilcummin-Diamond Downs Road - no pavement information No detailed pavement information provided
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Crash data is between 4 and 6 years old.	Current crash data (obtainable from both Mackay and North Queensland Region) should be used in the RIA and particularly in the safety analysis to be included in the SEIS. The Transport Report indicates increases of traffic volumes up to 254% on sections of the State controlled Road (Gregory Developmental Road) which already have high crash statistics for existing volumes. Significant increases in project traffic volumes place road users at much higher risks and safety analysis and strategies need to be undertaken in the RIA.	Vol 3, section 11 Section 11.2.2.6 Crash History	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4Appendix P Traffic Impact Assessment). The traffic count and crash data that is presented in the TIA is the latest data (received July 2013) and it has been acquired from DTMR or from other reports as defined by each of the references
38	QDTMR Northern Region - Townsville	Transport	Other rail infrastructure	This section indicates the Goonyella Rail System may be upgraded to increase capacity. It is unclear when the Goonyella Rail upgrade will be completed and what, if any, output would be railed via this line.	In the SEIS, identify when the upgrade for the Goonyella Line for export via the Port of Hay Point will be completed and state what quantity of product coal is likely to be exported via this line in the mine operational phase.	Vol 3, section 11 Section 11.2.2.6.1 Goonyella	Assessment of expansion of existing rail infrastructure capacity is outside scope of this EIS process. Any upgrades to the Goonyella line will be subject to additional assessment outside the scope of this EIS. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	The Transport Report identifies numerous urban areas where haulage by road and rail is predicted. No analysis of the impact of haulage in urban areas has been carried out.	In the SEIS, the RIA for each project component must address project impacts within the urban environment and recommend mitigation strategies. Haulage is proposed through high population areas of Townsville, and Mackay. No analysis is made of the impact on the urban transport network including intersection safety analysis thereby preventing TMR from determining safety and efficiency mitigation.	Vol 3, section 11 Section 11.2.2.7 Urban Areas	The ToR required an impact assessment for the local and regional areas. There are no urban areas with the local area. Analysis of traffic impacts with the urban areas of regional towns was not specified in the ToR. Impacts to the main roads servicing regional towns has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Other rail infrastructure	The proponent has advised that the Newlands Rail System is to be significantly expanded. It is unclear when the Newland Line upgrade will be completed and what, if any, output would be shipped via this line.	In the SEIS, identify when the upgrade for the Newlands Line for export via the Port of Abbott Point will be completed and what quantity of export via this line is proposed in operational phase.	Vol 3, section 11 Section 11.2.3.2 Newlands	Assessment of expansion of existing rail infrastructure capacity is outside scope of this EIS process. Any upgrades to the Newlands Rail System line will be subject to additional assessment outside the scope of this EIS. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
38	QDTMR Northern Region - Townsville	Transport	Port facilities	The Ports of Townsville, Mackay, Hay Point and Abbott Point have been identified as being used for both the construction and operational phases of the development. No distribution of types and quantities of project inputs and outputs to be hauled for the construction and operational phases of all components of the project has been provided.	In the SEIS, provide an estimate of import/export volumes by mode and timing anticipated for each of the four ports. TMR require an estimated timing, haul and mode for construction of the rail, mine and operational phases including mine camps, and adequate assessment of impacts on the State-controlled transport network.	Volume 3 Section 11.2.4 Sea Ports	Assessment of expansion of existing rail infrastructure capacity is outside scope of this EIS process. Any upgrades to the existing rail infrastructure will be subject to additional assessment outside the scope of this EIS. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	This section states 53km of unsealed Gregory Developmental Road is unsealed. Gregory Developmental Road is fully sealed however some sections are single width only, with programming by TMR to be widened to two lane seal.	In the SEIS, the RIA must assess impacts on road operation, safety and access based on current road standards.	Vol 3, section 11 Table 11.6 Indicative Transport Corridors	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Heavy vehicle generation is shown table 11.7 and assumes all heavy vehicle movements will use the entirety of the nominated transport corridor.	In the SEIS: - Provide best estimates on origin and destination points for all trips – not just bulk movements over the entirety of a transport corridor. - Clarify if the heavy vehicle movement numbers shown include those movements along the proposed rail corridor access road. - Identify lengths of transport corridors on which movements occur and number and type (including ESA) of heavy vehicles on each transport route	Vol 3, section 11 11.3.2 Rail Construction Traffic	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	The Suttor Developmental Road is listed as a section of network to be utilised by the Project (Rail). Table 11.9 deals only with transport corridors 1, 2 & 3 and omits other roads forming part of the road transport network which is envisaged to be used.	The RIA included in the SEIS must assess impacts on all sections of the network to be used by project-related traffic. Traffic volumes and RIA are required over all sections of the network intended to be used by the Project (Rail)	Vol 3, section 11 11.3.2.2 Traffic Distribution	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).

38	QDTMR Northern Region - Townsville	Transport	Transport of workers	400 workers are to be located at each workers camp and are to reach work sites via 4 wheel drives or buses.	In the SEIS, provide greater detail on how the workers are to be transported to work sites – the comments relating to use of either four wheel drives or buses is inadequate as the traffic volumes created by four wheel drives would be significant.	Vol 3, section 11 11.3.4 Construction Workforce Movements	As noted in the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) workforce access to each site will be generally via bus / coach for all locations. The primary route for the majority of local movements will be the Moray-Carmichael Road. A bus fleet will be required to support both the construction and operational phases of the project. The buses will primarily transport the workforce to / from the Airport(s) (FIFO) and each work site.
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Supply vehicles are noted at 20 each week	In the SEIS, provide background detail on how service vehicles estimates were achieved and provide updated figures if necessary. The estimated generation rate is extremely low in comparison to other comparable operational activities for scale of development and size of workers camp. TMR believe there is a significant underestimation. For example Ergon state that for their 200 worker camps trip generate rates of 100vpw.	Vol 3, section 11 11.3.2.5 Other light Vehicle Traffic	Noted. Updated supply vehicle estimates are provided in the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Road crossings	This section states that trains will have an average travelling speed of 60km when crossing Open Level Crossings. This section conflicts with 11.3.5.4 which states a speed of 80km per hour when crossing local roads.	Clarify in SEIS.	Vol 3, section 11 11.3.3 Operation Traffic	Trains speeds will be up to 80km/hr when loaded and 100 km/hr when unloaded. Train speeds at each individual crossing will be finalised through a rail safety analysis and dependant on the crossing type. These speeds will vary between 60 km/hr and 100km/hr. This information was provided in EIS Volume 3, Section 2, Table 2-5.
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Figure 11-5 shows monthly peak heavy vehicle movements at 59,500 vehicles per month (VPM) whereas worst case scenario only provides for 50,000 VPM.	In the SEIS, clarify which HV estimate for Project (Rail) is correct or is the 10,000 VPM shortfall intended to traverse local and not State roads.	Vol 3, section 11 Figure 11-5	Noted. Updated supply vehicle estimates are provided in the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Construction traffic movement and volumes during construction phase – Rail.	In the SEIS, clarify whether sections of the Bruce Highway will be used to transport materials and/or workers during the construction phase of the rail as stated in Volume 2 Section 11 Table 11-3	Vol 3, section 11 Tables 11-12 and 11-13	Noted. A revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). The Bruce highway is not listed in this report as the crash data from DTMR is for the Peak Downs Highway, between the Gregory Developmental Road and Bruce Highway (about 270km in length).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	The Transport Report provides no impact analysis of the proposed Project (rail) on the State controlled road network, rather the proponent advises it will continue to 'negotiate' with TMR	In the SEIS the proponent must provide a detailed road impact assessment report, based on current best estimates, including, but not limited to, pavement, access, intersection performances, bridges, culverts with corresponding mitigation strategies, which may include contributions, pavement works, rehabilitation, widening, road use management etc to fully address all identified safety, efficiency and condition impacts. The anticipated vehicle movements for the Project (rail) pose significant risks to safety, efficiency and condition of the network. Commencement of the project is mooted to be March 2013 therefore the proponent should have already carried out impact studies and be able to provide the department with appropriate recommendations. This has not occurred. Additionally, the report does not present a 'cumulative' impact which will arise as commencement of the Project (Mine) and miners' accommodation commences.	Volume 3 Section 11.4 Summary and mitigation strategy	The EIS did provide an impact analysis on the State controlled network within the limits of the ToR and Impact Assessment Boundary. Specifically, impacts to the Gregory Developmental Road were provided. A revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	The Transport Report has not been prepared in accordance with TMR's policy and guidelines. Whilst reference is made to GARID, it has not been followed. If it had, the information required by TMR to make a reasonable assessment of the proposed development would have been provided.	The SEIS must include a RIA prepared in accordance with GARID. Include in that assessment cumulative impacts relating to: a) traffic operation (midblock & intersection performances, drop off/collection) b) road safety c) pavement and bridge impacts (to be based on equivalent standard axles for heavy vehicle component) d) changes to road network e) noise and hydrology f) mitigation strategies TMR made a submission on the draft Terms or Reference on 17 March, 2012. The GHD Transport Report prepared for the project has significantly failed to address TMR's submission/requirements.	Vol 4, app W PROJECT (Mine) Volume 2 25215-DRP-0024 Generally	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	The Transport Report reviews construction and start up operation of the mine component of this development separate from construction of rail. In order to assess the proposal, TMR requires an RIA showing the cumulative impact relating to all four components of the project, that is rail construction, mine construction, mine camp construction and mine operation.	In the RIA included in the SEIS, clearly describe both individual and cumulative impacts and proposed mitigation measures arising from the four components of the project: a) Rail construction b) Mine Construction c) Mine Camp Construction d) Mine Operation Clearly describe and use as a basis for each component origin and destination, quantities, material hauled, (for example, ballast, fill, rail, construction and accommodation infrastructure), types of vehicles, numbers of each vehicle type, equivalent standard axles, trips, workers camps, workers transport, support vehicles, transport modes and pickup/drop off localities, routes, intersections, train movements, track type locations, rail crossing impacts, hydrology and mitigation measures. The Transport Report does not provide adequate assessment of, or mitigation measures required to address the impacts of the proposed development on the State transport network arising from the cumulative impacts of the four components of the project.	Vol 4, app W PROJECT (Mine) Volume 2 25215-DRP-0024 Generally	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). A pavement assessment will be undertaken outside the SEIS process.
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Traffic volumes including AADT are out of date. The figures quoted throughout the Transport Report appear to be 4 to 5 years old and have not been adjusted	In the RIA included in the SEIS, use current traffic volumes – these can be obtained by contacting the Regional offices of TMR to obtain a copy of their latest traffic census data. Alternatively actual counts may be required. Utilisation of out of date figures will disproportionally increase the impact of the proposed development on the State transport network	Vol 4, app W PROJECT (Mine) Volume 2 25215-DRP-0024 Generally	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Access points	Access locations for mine and rail construction works and camps have not been identified.	In the SEIS identify, analyse and provide mitigation strategies of all accesses, including proposed location and required configuration/standard.	Vol 4, app W PROJECT (Mine) Volume 2 25215-DRP-0024 Generally	Access points including roads were provided in the EIS through the MCU application material under Volume 4 Appendix D. The requested information has been included within a number of SEIS sections (Volume 3 Section 2, Volume 4 C1 through C5).

38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	This section states that the proponent has entered into an agreement with TMR re: the treatment of the Moray - Carmichael Road and the Gregory Development Road. There is an opportunity for TMR to provide rest areas for heavy vehicles transporting materials from Townsville, and to provide pull-off areas for other traffic.	Provide a copy of this agreement in RIA included in the SEIS, as well as background material in respect to facility locations as it is relevant to safety.	Vol 4, app W PROJECT (Mine) Volume 2 25215-DRP-0024 1.3 Proposed Mine Access Arrangements -	The agreement between Adani and IRC is commercial in confidence and cannot be appended to the SEIS documentation. The revised Traffic Impact Assessment (TIA) undertaken for the Project provides detail on relevant impacts to these roads (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). Commitment to consult with DTMR and IRC over infrastructure agreements regarding the long term maintenance of impacted local roads is included in the SEIS Volume 4, Appendix G, Project Commitments Register. Similarly Adani has committed to consulting with DTMR, QPS and other proponents over the provision of rest up areas.
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	This section lists a number of “townships” that the Flinders Highway passes through, but these in fact appear to be railway sidings.	Clarify and correct in the SEIS. It appears that in preparing this report, no enquiry was made as to what were townships and what were railway sidings. Queenton – is a suburb of Charters Towers No “township” evident at the locations of Breddan and Toonpan on relevant mapping. No “townships” evident at the locations of Almoora; Briaba; Binbee and Armuna on relevant mapping.	Vol 4, app W PROJECT (Mine) Volume 2 25215-DRP-0024 3.1.2 Description of existing Road Conditions – Flinders Highway	Noted. A revised Traffic Impact Assessment (TIA) has been undertaken for the Project provides detail on relevant impacts to the Flinders Highway (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Population data is incorrect	Correct report to clearly identify current populations and update all related assessment in the SEIS. Qld Statistician population estimates for the Mackay and Townsville LGAs as at 30th June 2011 are 115,677 and 180,389 respectively.	Vol 4, app W PROJECT (Mine) Volume 2 25215-DRP-0024 3.1.8 Urban Areas Table 3-11 Townships Potentially Impacted During Construction Page 3-14	Noted. A revised Traffic Impact Assessment undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment) An assessment of the traffic impacts to the local roads as a result of the Project has been undertaken and included in Volume 4, Appendix P Traffic Impact Assessment Report).
38	QDTMR Northern Region - Townsville	Transport	Airports	Airports at Bowen and Collinsville are referenced in Section 3.4 but are not identified on Figures 3-1 and 3-2.	Clarify and correct in the SEIS.	Vol 4, app W PROJECT (Mine) Volume 2 25215-DRP-0024 Figure 3-2 Project Area Ports and Airports and Section 3.4 Existing Airport Facilities	Comments are noted.
38	QDTMR Northern Region - Townsville	Transport	School bus routes	This section states that ‘Local school buses operate in the area servicing schools at Moranbah and Clermont; these buses generally operate on local roads and the Peak Downs Highway.” Section 11.2.5 of Volume 2 Section 11 of the EIS makes the same statement. No further data/information is provided in relation to these services.	In the SEIS, provide further information as to the number of school buses and the routes (current and projected) they use in order to determine whether the vehicle movements generated by the proposed development will significantly impact on the operations/safety levels of those bus services and pedestrian movements at bus stops. School buses operate on a much wider network than that indicated in the EIS	Vol 4, app W Section 3.5 School and Public Transport Services.	Refer to comment on issue 38AT An assessment of the traffic impacts to the local roads as a result of the Project has been undertaken and included in Volume 4, Appendix P Traffic impact assessment report). The Road use Management Plan will consider impacts on school bus routes (SEIS Volume 4, Appendix G, Project Commitments Register, R10.1).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Traffic destination rates and route estimates are not realistic (for example 100% of all construction material from Townsville)	Negotiate an agreed percentage split of trip assignments based on sensitivity analysis and include in RIA that will form part of the SEIS. The proposed transport splits are unrealistic and not consistent with other Transport Reports provided for similar operations.	Vol 4, app W Transport Report 25215-D-RP-0024 Section 4.2.4	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Table 4.4 lists 540,900 earthworks and civil activities movements. These have been identified as travelling to and from Townsville and Mackay via transportation corridors TC01, TC02 & TC03. In all likelihood these movements would be largely restricted to site. A correct assessment of vehicle impact from the logistics study should identify how many of these vehicles are likely to use the state and council road network and identify vehicle numbers and ESA impacts on these roads. The current methodology potentially significantly overestimates the impact of construction traffic.	The RIA included in the SEIS should detail supply locations, rail lengths, haul routes for short rail segments and the location of welding sites for the rail line. It is likely that rail supply for short rails will either by Whyalla (26m lengths) or imported from India or China (36m segments). These long loads may require specific route and turn path assessment due to the length of the nonarticulated transport vehicles required and the inability to use jinker trailers due to the need for support of rails at approx 6m centres during transport. Assessment of transport of sleepers (from Rockhampton?) should be undertaken and included in the updated RIA. An estimated 60,000t of ballast would comprise part of this haulage task. As there are six ballast quarries assessed by TMR to provide rail ballast, pavement material and aggregate within the vicinity of Moranbah, Dysart and Clermont, it is highly unlikely that rail ballast will be sourced from Townsville or Mackay and the impact assessment should address this and correctly show the haul routes, hauled tonnages and ESA impact.	Vol 4, App AG Transport Report 25215-D-RP-0016 Table 4.4	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). An assessment of the traffic impacts to the local roads as a result of the Project has been undertaken and included in Volume 4, Appendix P Traffic Impact Assessment report).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Table 4.4 lists 48,000 track-laying vehicle activities and these are allocated as above to transportation corridors TC01, TC02 and TC03 to Townsville and Mackay respectively. TMR has concerns that transport analysis is incorrect.	In the SEIS, negotiate an agreed percentage split of trip assignments based on sensitivity analysis and include in the updated RIA.	Vol 4, App AG Transport Report 25215-D-RP-0016 Table 4.4	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	This section estimates Mine Construction Truck Movements.	In the SEIS, clarify whether these are AADT, Daily Peak, monthly or something else.	Volume 2, section 11 Table 11-12	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Northern Region - Townsville	Transport	Road Impact Assessment	Heading – Figure 11-4 deals only with Gregory and Flinders Hwy yet heading states “Construction Heavy Vehicle Profile… across the Project”	In the SEIS ensure ALL headings for figures and tables describe in full the representational chart.	Volume 2, section 11 Figure 11-4	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR - Program Delivery and Operations Division Mackay Office	Transport	Road Impact Assessment	The methodology adopted does not fully address Terms Of Reference (TOR) impact assessment on capacity, safety, efficiency and condition of transport operations, services and assets. Dot point one of TOR section 3.9.3 Potential impacts states these items shall be assessed generally in accordance with the Guide for Assessment of Road Impacts of Developments (GARID).	TMR requires additional information as to the project’s impact on the road network. In the Supplementary Environmental Impact Statement (SEIS), provide an amended Road Impact Assessment (RIA) which includes the project’s impacts on rural intersections in accordance with Road Planning and Design Manual Part 13. Pavement and maintenance impacts also need to be assessed and addressed for the construction and operational phases of the project. Traffic impacts are to be assessed for the project as a whole not for individual components of the project (ToR 3.9.2).	Vol 2, Mine: Section 1 ‘Introduction’ , Subsection 1.1 ‘Project Overview’ and, subsection 1.2 ‘Study Area’, Page 1-1, And Section 11.1.2 Methodology. Page 11_1	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR - Program Delivery and Operations Division Mackay Office	Transport	Road Impact Assessment	Inadequate methodology as outlined in Section 11.1.2 (**refer 38CC)** has been carried through both these reports so that ToR section 3.9.3 is not adequately addressed. ToR section 3.9.5 has also not been adequately addressed in that no ameliorative measures have been recommended	The SEIS must adequately address all matters outlined in section 3.9.3 of the ToR. This assessment to include road impact assessment, pavement impact assessment, traffic operation assessment and safety assessment.	Volume 4 - Appendix W Mine Transport Assessment and Appendix AG Rail Transport Assessment	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).

38	QDTMR - Program Delivery and Operations Division Mackay Office	Transport	Other rail infrastructure	Increased rail haulage associated with this development is proposed to be mitigated through scheduling of trains. There are several at-grade crossings of State-controlled roads that are shown as having intensification of use. The impact on safety at these crossings and delay times on the State controlled road network have not been addressed.	In the SEIS, provide a detailed assessment of the impact of these increased train movements on the safety, amenity and economy of affected towns. Train and traffic volumes may warrant grade-separated crossings at all state controlled road / rail crossings on the mine to port route. Issues to be assessed include increased noise/dust/light/vibration, more frequent train movements resulting in longer and/or more frequent delays when trying to cross the railway line to access services and facilities, emergency services access, delays contributing to increased risk taking at crossings as motorists and pedestrians attempt to “beat the train” to avoid delays, and the economic costs to local residents and businesses.	Vol 3, Section 11.3.5.3 Impact To existing rail operations	Assessment of expansion of existing rail infrastructure capacity is outside scope of this EIS process. Any upgrades to the existing rail infrastructure will be subject to additional assessment outside the scope of this EIS. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
38	QDTMR - Program Delivery and Operations Division Mackay Office	Transport	Transport of inputs and outputs	Mackay is a major supplier of mining related support to the Bowen Basin and potentially the Galilee Basin. The Department of Transport and Main Roads Galilee Basin Transport Framework (GBTF) – August 2012 has identified that mine EIS traffic generation estimates are often substantially less than surveyed traffic volumes at mine accesses. 100% of traffic to Townsville seems unrealistic as this route includes an unsealed portion. Brisbane, Clermont, Moranbah, and Mackay are established supply centres for mining activity and it is likely that some materials will be supplied from these locations.	In the SEIS, undertake a sensitivity analysis to determine a more substantiated percentage split of trips assigned to other regional centres that supply mining and construction supplies and equipment to justify the assignment of traffic volumes.	Volume 4 - Appendix W Report Transport Assessment 25215-D-RP-0024 Section 4.2.4	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR - Program Delivery and Operations Division Mackay Office	Transport	Transport of inputs and outputs	Road operational efficiency matters have not been addressed.	In the SEIS, assess and address impacts on operational efficiency of the State controlled road network including impacts on travel time and freight efficient vehicle operation for the construction and operational phases of the project. A reduction in efficiency on the state controlled road network as a “soft” ameliorative measure is not acceptable. High percentages of heavy vehicles on narrow pavements result in increased travel times. The proposed use of “soft” mitigation measures such as reviewing speed restrictions, providing increased traffic control and maximisation of vehicle loads, decreases the efficiency of the network thus increasing the cost of transport for the community. Infrastructure-based mitigation solutions should therefore also be considered.	Volume 4 - Appendix W - Transport assessment report 25215-drp-0024 section 7.3.5 Mitigation measures (ToR3.9.3 dot point 4.)	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR - Program Delivery and Operations Division Mackay Office	Transport	Hazard and Risk	The project’s impact on road operational safety is inadequately addressed as it only provides details about the current situation. No assessment on the impact of this development on road safety is provided.	In the SEIS, undertake and document a safety review process as detailed in GARID section 7.0. Assessment is to include all aspects of development and is to include ameliorative measures to address potential increases in risk.	Vol 3, Section 11.2.2.6	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR - Program Delivery and Operations Division Mackay Office	Transport	Over dimensional vehicles	Para 3 Dot point 4 the EIS does not provide details about the likely heavy and oversized/indivisible loads, highlighting any vulnerable structures along the proposed routes	In the SEIS provide details as requested in ToR section 3.9.2 dot point 4. The proposed mitigation measure is to transport the construction equipment in as large a vehicle as possible. Over-Dimension/Over-Mass (OD/OM) vehicles are only permitted to travel where the load is indivisible. If using the largest loads possible is the mitigation strategy, are the OD/OM loads truly indivisible?	Vol 3, Section 11.3.4.7	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR - Program Delivery and Operations Division Mackay Office	Transport	Road Impact Assessment	The number of light vehicle trips associated with the rail and the mine construction and operation activities seems to be underestimated. A RIA has not been satisfactorily undertaken. A logistics report is referred to but this has not been supplied	A detailed assessment of traffic generated during all phases of the project is required as part of the SEIS. Provide detailed trip generation information for all aspects of the project including sufficient information to justify the predictions and enable this to be verified. Include an updated project logistics report in the Appendix to the SEIS.	Vol 3, Section 11.3(rail)	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR - Program Delivery and Operations Division Mackay Office	Transport	Access points	Access locations for rail and mine construction have not been identified or assessed.	In the SEIS, identify all access locations proposed and detail the standard at each access.	Vol 4, Appendix AG Rail Transport AssessmentTransport Report 25215-d-rp-0016	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR - Program Delivery and Operations Division Mackay Office	Transport	Road Impact Assessment	Summary of Traffic and Transport Assessment. Traffic volumes presented in report do not support the statement that “the expected increase in traffic associated with the construction of the project (rail) can be adequately accommodated and does not impact the operating performance of the road.	Examine total project impact not components of project in isolation. Assess project impacts in accordance with GARID	Vol 3, Section 11.4	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR - Program Delivery and Operations Division Mackay Office	Transport	Ongoing assessment	Impacts from operation of the project are not assessed for the duration of the project	Detail the length of the assessment period covered for this EIS. The very long proposed operational life of the mine poses considerable difficulties in fully assessing and mitigating impacts so far into the future. A staged assessment process that allows impact assessments to be updated periodically, and mitigation measures to be imposed, amended or deleted as required, may be warranted.	Volumes 2 and 3, Section 11 Volume 4, App W and AG	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Freight, Ports and Governance	General comment	General comment		For noting, the proponent is advised that QR National Ltd. is now trading as Aurizon Ltd. SEIS documents should refer to the correct company name.	Across document	Comments are noted.

38	QDTMR Freight, Ports and Governance	Cumulative Impacts	Traffic and transport	There are a number of significant coal mining operations planned for the Galilee Basin with similar delivery timeframes and in close proximity to each other. It is anticipated that cumulatively the Carmichael, Alpha, Kevin's Corner, Galilee and South Galilee Coal projects will potentially generate over 120 000 heavy vehicles trips per annum on regional roads for the transport of operational supplies and wastes. Given that these projects have significant lifetimes (30+years) and are in relatively close proximity to existing rail infrastructure, opportunities to minimise the impacts of the cumulative freight tasks on regional roads and on safety and amenity of other road users should be explored. Savings maybe realised through economies of scale and increased transport efficiencies. This may occur by some or all of these project proponents collaborating to develop rail based transport solutions for the supply of some construction phase inputs and most operation phase inputs, such as fuel and general consumables.	The proponent is encouraged to consult with the proponents of neighbouring major coal mining projects and rail service providers with a view to developing a collaborative approach to managing the impacts of the cumulative road transport tasks of project construction and operation phase supplies. The results of this consultation and feasibility of rail based transport solutions should be reported in the Supplementary Environmental Impact Statement (SEIS). Carmichael Coal and the other Galilee coal projects will generate significant freight tasks for the delivery of operational supplies over extended durations (eg.30 plus years) there is a case to be argued that cumulatively these mines offer a potentially commercial base load demand that could support regional rail freight services without the need for government subsidies in the form of transport service contracts (TSCs) and serve to: - reduce the impacts of increasing heavy vehicle traffic on rural and regional roads in terms of safety for other road users and maintenance costs; - present potential commercial opportunities to utilise rail for agricultural export transport tasks; - potentially attract new rail operators into Queensland to provide increased competition; - form the basis of regional hub and spoke freight distribution systems to service mines in the region and the wider community; - provide transport and logistics employment and business opportunities for local rural communities; - increase returns in investment in government-owned rail infrastructure and commercial road fleet and workforce assets; - reduce freight transport-related greenhouse gas emissions.	Vol 1. Page 8 - 29 Chp8 Cumulative Impacts 8.3.7 Traffic and Transport 8.3.7.1 Road	Adani has discussed potential co-location opportunities in the EIS Volume 1 Introduction Section 1.6 for rail and power infrastructure. Adani is willing to consult with neighbouring coal mining projects for other opportunities where required.
38	QDTMR Freight, Ports and Governance	Transport	Transport of inputs and outputs	The proponent has not adequately addressed the requirements of the Terms of Reference (ToR) regarding road transport tasks associated with all phases of the project. Descriptions provide only estimates of vehicle numbers and vague outlines of project inputs for this part of the project.	The proponent is requested to provide in the SEIS, for all phases of the project expected volumes of project inputs and outputs of transported raw materials, wastes, hazardous goods, and finished products, as stipulated in the Terms of Reference. S3.9.2 of the ToR states – "For all phases of the project, describe the following: - expected volumes of project inputs and outputs of transported raw materials, wastes, hazardous goods, finished products"	Vol 2. Mine Project Chp11 Transport And Vol 4 Appendix W Sections 4 & 5	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Freight, Ports and Governance	Transport	Transport of inputs and outputs	The proponent has not adequately addressed the requirements of the Terms of Reference (ToR) regarding road transport tasks associated with all phases of the project. Descriptions provide only estimates of vehicle numbers and vague outlines of project inputs.	The proponent is requested to provide in the SEIS, for all phases of the project, expected volumes of project inputs and outputs of transported raw materials, wastes, hazardous goods, and finished products, as stipulated in the Terms of Reference. S3.9.2 of the ToR states – "For all phases of the project, describe the following: - expected volumes of project inputs and outputs of transported raw materials, wastes, hazardous goods, finished products"	Vol 3. Rail Project Chp11 Transport And Vol 4 Appendix AG Section 3	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
38	QDTMR Freight, Ports and Governance	Air quality	Coal dust management	The measures outlined in Section 7.3.6 Mitigation Measures relating to management of coal dust are inadequate. The Carmichael Coal Project is intending to use railways owned by Aurizon Limited and GVK-Hancock. In order to export coal on the Aurizon Goonyella and Newlands Rail Systems, the Carmichael Coal Mine and Rail Project will need to implement measures consistent with the QR Network Coal Dust Management Plan (2010). The GVK-Hancock Railway has also been conditioned by the Coordinator-General to implement a Coal Dust Management Plan (including veneering) that is consistent with the measures contained in the QR Network Coal Dust Management Plan (2010) Paragraph 1, Section 7.3.6 states that "Measures to minimise particulate emissions associated with the construction and operation of the Project (Rail) have been identified in the QR Limited's Coal Dust Management Plan (QR Limited, 2010) and discussed in the Project (Rail) Draft Environmental Management Plan, Volume 3, Section 13." The correct title of the document is the QR Network Coal Dust Management Plan (2010).	Include in the SEIS an amendment to the last sentence in Section 7.3.6 Paragraph 1, to read as follows: "Measures to minimise particulate emissions associated with the construction and operation of the Project (Rail) have been identified in the QR Network Coal Dust Management Plan (2010) and measures consistent with this Plan have been adopted and included in the Project (Rail) Draft Environmental Management Plan, Volume 3, Section 13." This section of the SEIS should give an undertaking to implement measures consistent with those identified in the QR Network Coal Dust Management Plan (2010). This amendment is a Key Deliverable for TMR to support approval of this project.	Vol 3 Rail Project, Page 7 - 18, Chp7 Air Quality 7.3.6 Mitigation measures	Adani will prepare a Coal Dust Management Plan identifying control measures to mitigate the emission of dust from loaded and unloaded coal trains. When operating on any Aurizon Operation Ltd (Aurizon) railway line, Adani will comply with the recommendations stated in the Aurizon (2010) Coal Dust Management Plan. Please refer to SEIS Volume 4, Appendix W for the Rail EMP, section 6.5.3 for Rail Operations related to coal dust. Section 6.5.3, Table 6-7 of Appendix W EMP (Rail) has been updated to include a commitment that the coal dust management plan will be consistent with Aurizon (2010) Coal Dust Management Plan.

38	QDTMR Freight, Ports and Governance	Air quality	Coal dust management	Under the Operation Heading and dot-point 3, the draft Air Quality Management Plan (AQMP) states that: "Control measures to mitigate dust from loaded and unloaded coal trains will be put in place in accordance with the recommendations stated in the QR Network (2010) Coal Dust Management Plan." Despite this statement this section does not contain measures consistent with the QR Network (2010) Coal Dust Management Plan. In several places the AQMP states that the recommended measures will merely be "considered".	Include in the SEIS (AQMP) an amended Dot-point 3 to read: "Control measures to mitigate dust from loaded and unloaded coal trains will be put in place in accordance with the recommendations stated in the QR Network Coal Dust Management Plan (2010). o At the Carmichael Coal Mine Site, the Coal Producer Dust Mitigation Activities, per Table 3.1.2 QR Network Coal Dust Management Plan (2010) will be implemented, and will include veneering systems. o As a Rail Network Manager, the QR Network Coal Dust Mitigation Strategy and Activities, per Table 3.3.3 QR Network Coal Dust Management Plan (2010), will be implemented. o At Adani Coal Terminals, the Goonyella Export Terminals Coal Dust Mitigation Opportunity Measures, per Table 3.4.4 QR Network Coal Dust Management Plan (2010), will be implemented, including wagon vibrators, unloading facility infrastructure and wagon washing facilities." Assuming the above amendments are incorporated, delete the last dot-point in Section 13.5.6.4: "Wagon washing will be considered to reduce coal dust emissions from empty wagons on the return trip to mine." Effective, coordinated and integrated coal dust management on Queensland coal supply chains is a high priority for the Queensland Government. The amendment outlined here is a Key Deliverable for TMR to support approval of this project. Background –	Vol 3. Rail Project Page 13-42, 13.5.6 Air Quality Management Plan, 13.5.6.3 Implementation Strategies	Adani will prepare a Coal Dust Management Plan identifying control measures to mitigate the emission of dust from loaded and unloaded coal trains. When operating on any Aurizon Operation Ltd (Aurizon) railway line, Adani will comply with the recommendations stated in the Aurizon (2010) Coal Dust Management Plan. Please refer to SEIS Volume 4, Appendix W for the Rail EMP, section 6.5.3 for Rail Operations related to coal dust. Section 6.5.3, Table 6-7 of Appendix W EMP (Rail) has been updated to include a commitment that the coal dust management plan will be consistent with Aurizon (2010) Coal Dust Management Plan.
38	QDTMR Freight, Ports and Governance	Air quality	Coal dust management	(as above)	Economic impacts of coal dust ballast fouling Coal dust emissions are not just an air quality issue. Coal loss and ballast fouling significantly degrades coal export system capacity and impacts rail safety. Coal dust particles emitted from the surface of loaded coal wagons and from wagon ballast fouling and high levels of ballast water retention. Ballast fouling reduces ballast strength and track stability and significantly degrades the ballast's ability to do its job. Coal dust ballast fouling is an expensive problem for rail owners and ultimately for all coal-chain users. It requires extensive track closures and track possession to undertake ballast cleaning, track undercutting and reballasting operations and associated track maintenance. Coal ballast fouling can cause derailments, delays and reduces the threshold point for the introduction of train speed restrictions under wet conditions. The flow-on effects of coal fouling, lost train paths and track capacity then reverberates across the coal chain to impact above-rail operations, coal terminal operations and the shipping stem.	Vol 3. Rail Project Page 13-42, 13.5.6 Air Quality Management Plan, 13.5.6.3 Implementation Strategies	Comment noted
38	QDTMR Freight, Ports and Governance	Air quality	Coal dust management	(as above)	Reducing Export Losses and System Costs In 2008 Aurizon estimated the value of the physical loss of coal and coal dust from wagons during transit and the loss of coal export capacity due to ballast fouling and its flow-on effects at A$650m per annum, or more than 3% of annual exports. At 2012-13 export levels this represents a loss of annual exports of approximately 5Mtpa, worth US$1,026m at current prices. These lost exports also contribute to a loss of state coal royalties of over A$88m per annum. Aurizon currently estimates its direct cost of ballast cleaning is in excess of A$40m p.a.	Vol 3. Rail Project Page 13-42, 13.5.6 Air Quality Management Plan, 13.5.6.3 Implementation Strategies	Comment noted
38	QDTMR Freight, Ports and Governance	Air quality	Coal dust management	Under the heading Operations, dot-point 2 states: "Treatment of the coal surface when in wagons (veneering) will be considered to minimise coal dust emissions during transport." This mere consideration of veneering, is inconsistent with the claimed undertaking Section 13.5.6.3 dot-point 3, draft Air Quality Management Plan (AQMP) which states that: "Control measures to mitigate dust from loaded and unloaded coal trains will be put in place in accordance with the recommendations stated in the QR Network (2010) Coal Dust Management Plan." The use of veneering is the primary recommendation and most practical and most cost effective treatment measure contained in the QR Network (2010) Coal Dust Management Plan. This is supported by the Comparison of mitigation options in terms of costeffectiveness and practicability, per Figure 9.1, Page 67, Final Report, Environmental Evaluation of Fugitive Coal Dust Emissions from Coal Trains - Goonyella, Blackwater and Moura Rail Systems, Queensland Rail Limited (2008).	In the SEIS (AQMP) include a new Dot-point 2 to read: "An effective veneering strategy will be developed in close consultation with Aurizon and GVK-Hancock, and coalsurface veneering spray stations will be installed consistent with the veneering strategy, and the QR Network Coal Dust Management Plan (2010)." In the Supplementary EIS (AQMP) amend the current Dot-point 2 to read: "The coal surface of loaded wagons will be treated using a veneering spray to minimise loss of coal and coal dust emissions during rail transport." This amendment is a Key Deliverable for TMR to support approval of this project.	Vol 3. Rail Project, Page 13-42, 13.5.6 Air Quality, Management Plan, 13.5.6.6 Corrective Actions	Adani will prepare a Coal Dust Management Plan identifying control measures to mitigate the emission of dust from loaded and unloaded coal trains. When operating on any Aurizon Operation Ltd (Aurizon) railway line, Adani will comply with the recommendations stated in the Aurizon (2010) Coal Dust Management Plan. Please refer to SEIS Volume 4, Appendix W for the Rail EMP, section 6.5.3 for Rail Operations related to coal dust. Section 6.5.3, Table 6-7 of Appendix W EMP (Rail) has been updated to include a commitment that the coal dust management plan will be consistent with Aurizon (2010) Coal Dust Management Plan.
38	QDTMR Freight, Ports and Governance	Transport	Transport of inputs and outputs	Opportunities to minimise the impacts on regional roads of the transport of rail construction supplies from Mackay to the construction supply depots should be further explored.	The proponent is requested to investigate the feasibility of utilising rail to transport construction supplies, such as concrete sleepers and rail steel. The proponent is requested to include in the SEIS a summary of the outcomes of the investigation and should clearly demonstrate that a rail approach is unfeasible if the road transport solution is to be pursued.	Vol 4. Appendix AG, section 6. Impact Assessment and Mitigation Measures – Construction Phase And Vol 3. Rail Project, 11.3 Potential Impacts and Mitigation Measures	The feasibility of using the existing rail network for transport purposes was investigated. Without available rail network capacity and capability, transport of goods to construction depots identified in the EIS and SEIS is not possible. Transport of goods beyond the Construction phase of the project is being investigated. An assessment of the traffic impacts to the local roads as a result of the Project has been undertaken and included in Volume 4, Appendix P Traffic impact assessment report).
39	IRC	Land	Land Use and tenure	There is no detailed land use analysis of the site and surrounding land to understand the key local economic drivers and the impacts of development now and beyond the mining.		Vol 2, Section 4.4	Noted. A revised economic assessment has been undertaken for the SEIS (refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
39	IRC	Introduction	Supporting infrastructure	There is no comprehensive master plan for the provision of key infrastructure (such as water and power supply) and the associated impacts of irreversible change in the locality.		Vol 1, Seciton 1	Noted. 3rd party provision of water and power is outside the scope of this EIS process and will be subject to separate assessment.
39	IRC	Social	Social Impact Assessment	The proposal is completely devoid of any meaningful local social mapping in the inception and design of the project and acts in isolation. It is impossible to meaningfully assess the true issues and opportunities without mapping the proposed interconnectivity between social elements of the project.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	This was discussed with IRC during the SEIS consultations. Techniques like social mapping would be potentially used during the implementation of the Community Development Strategies.

39	IRC	Social	Social Impact Assessment	The local impact of the proposal is unable to be attained due to the absence of any socioeconomic impact analysis and connection with the resident population present.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	Local impacts on landholders and Clermont (where possible) are discussed where relevant throughout the SIA and suitable mitigation measures to manage these impacts are proposed. Refer to SIA SEIS Volume 4 Appendix D1 and SIMP SEIS Volume 4 Appendix D2.
39	IRC	Air quality	Coal dust management	There is no dust foot print analysis and mapping has been provided that clearly details the modelling of the effects on the local area and the productive agricultural industry at the point of operations and the entire transport corridor.	The EIS must provide a draft dust mitigation strategy to prevent agricultural production losses and impacts to biodiversity. The mining operation must not emit particulate dust contamination levels beyond the mining tenement lease, above the existing pre-development background levels measured at the property boundary. This must also address the negative cumulative impacts on the health and wellbeing of surrounding rural residents including the long term adverse effects on agricultural production. Reduction in dust emissions must be focused on industry best practice e.g. by enclosing all the operational components of the mine including wash plant, crushing plants and conveyors to eliminate dust inputs into the environment. A real-time, on-line integrated monitoring system of high volume air sampling and dust deposition must be established to ensure a scientific approach is applied to the protection of residential and agricultural wellbeing in the Region.	Vols 2 and 3, section 7 Vol 4, Apps S and AD	Dust control measures have been identified in the revised mine air quality assessment (refer to SEIS Volume 4 Appendix L). Dust monitoring, management and mitigation measures are detailed in the Mine EMP, SEIS Volume Appendix Q1. Proposed EA conditions, including for dust emissions, are included in SEIS Volume 4 Appendix C6.
39	IRC	Cumulative Impacts	Transport	There is a clear absence of any cumulative analysis of the coal volume impacts (environmental and economic) along the existing transport corridor, which already exhibits detrimental environmental and agricultural impacts.		Vol 1, seciton 8	Comments noted. A revised Traffic Impact Assessment has been prepared for the SEIS (refer to SEIS Volume 4 Appendix J Traffic Impact Assessment Report).
39	IRC	Air quality	Air quality monitoring and management	The absence of live-time dust monitoring on site prompts concern for acceptable and healthy levels of PM10 and PM2.5 in and around the workers accommodation and surrounding homestead.		Vols 2 and 3, section 7 Vol 4, Apps S and AD	Comments are noted and the recommendations included in relevant management plans.
39	IRC	Social	Workforce management	The assessment of the project has avoided any meaningful analysis of liveability at the location and hides behind the FIFO model. This clearly underestimates and denies the connection to place that will occur with the locality where in excess of 6 generations of workers will actively engage with the project from commencement to closure.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	SIA SEIS Volume 4 Appendix D1 Sections 6.3 and 6.4 provide a justification for using FIFO workforce and Adani's commitment to considering DIDO or BIBO arrangements out of regional centres including Clermont, Emerald and Charters Towers once road infrastructure is improved. Considering the potential traffic volumes, reliable all-weather access roads are required, including between the Gregory Developmental Road and the Project (Mine) site. Adani will continue to engage with IRC on social issues such as connection to place and as relevant seek to address them through the Community Development Program (refer to SIMP SEIS Volume 4 Appendix D2 Section 3.9
39	IRC	Introduction	The Proponent	The project (as proposed) does not provide fundamental security for the investment decision and avoids the intergenerational sustainability risk assessment of the project in the locality.		Vol 1, Section 1	Noted.
39	IRC	Nature conservation	Rehabilitation	The project does not commit to a framework for a long term closure plan and rehabilitation of the site. Given strong evidence of climate change and economic variability being a serious player for this region over the project life, this element must be addressed.	All disturbed mining and rehabilitation areas must be rapidly re-vegetated and stabilised to prevent dust and surface water pollution from the site exceeding the pre-development levels at the property boundary. Council views a maximum period of 6 months for all non-active disturbed surfaces to be left exposed prior to re-vegetation and stabilisation being implemented as a minimum standard to protect local amenity and ecological integrity of the surrounding areas agriculture and proposed rehabilitation areas.	Vol 2, sections 5.5 and 13.34	Comment noted. Please refer to the Closure and Rehabilitation Strategies provided in the SEIS under Volume 4 Appendix R1 (Mine), R2 (Offsite), X1 (Rail), X2 (Quarries).
39	IRC	Social	Housing and health services	Why does the project not substantiate any real consideration of the remote location and the health and safety of workers? Why does it rely on the FIFO model?		Vol 1, Section 3 and 4 Vol 4, Apps F and G	Justification for using FIFO workforce has been discussed in SIA SEIS Volume 4 Appendix D1 Sections 6.3 and 6.4.
39	IRC	Hazard and Risk	Hazard and Risk	The project proposes low grade infrastructure immunity levels subject to inundation and natural disaster loss at very low thresholds. There is no consideration to renewing infrastructure connections; re-suppling large volumes of raw infrastructure materials; and the logistics of transporting and sourcing these components during adverse weather conditions.		Vols 2 and 3, section 12	Emergency Response Plans will be compiled and established to address these foreseeable risks prior to works commencing. This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Sections 2.2.2, 2.3.2 and 2.3.11.
39	IRC	Nature conservation	Pest species	Mine operation needs to satisfactorily address the ingress of invasive weed species within the lease area. Of particular concern are areas along the hall route; access to the site; and any water courses that can rapidly spread invasive weed species to down-stream properties and the broader interregional catchments.	It is recommended best practice agricultural weed management strategies are adopted to prevent further expansions of existing infestations into the surrounding rural landscape.	Vols 2 and 3, section 5.3 and 5.4 Vol 4, App N1 and AA1	Updates have been made to the Project's EMPs (SEIS Volume 4, Appendix Q1 EMP - Mine, Q2 EMP - Offsite and W EMP - Rail) to more fully reflect the management measures to be adopted to prevent weed incursion and spread to surrounding properties and environments.
39	IRC	Cumulative Impacts	Social impacts	The EIS needs to reflect the cumulative impacts of numerous mining operations proposed, planned or approved in the vicinity with a focus on the quadruple bottom line being economic, environmental, cultural and social outcomes. As projects are approved, a collaborative broad spectrum cumulative study, must be undertaken which explores impacts to the Rural and Urban Comrnunity of Isaac Regional Council.		Vol 1, Section 8	Comments noted. The EIS cumulative impact assessment was undertaken in accordance with the ToR which required inclusion of publically known projects or projects advised by DEEDI to be in the region. The Methodology for the assessment and baseline data used was presented and was not prescribed under the ToR. The cumulative impact assessment was undertaken by the EIS consultant - GHD Pty Ltd.
39	IRC	Waste	Waste management	The EIS document does not address the disposal of additional solid and sewerage waste waters from the operation or the impacts this increased volume of this waste will create in the region. Of particular concern is the cumulative effect of the nitrification of the upper Belyando catchments over the project life. The nitrification of the catchments is considered is unsustainable and will significantly impact aquatic and terrestrial ecosystems.		Vol 2 and 3, section 10	Updates have been made to the Project's EMPs (SEIS Volume 4, Appendix Q1 EMP - Mine, Q2 EMP - Offsite and W EMP - Rail) in regard to waste management.
39	IRC	Social	Workforce management	The EIS does not address the social impacts created by using transitional work forces and not housing workers locally. The social impacts of isolated workers and fragmented caring arrangements for families rnust be considered as it is unsustainable over the project tirne line.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	These impact are considered and are addressed under the workers health, safety and wellbeing program (refer to SIA SEIS Volume 4, Appendix D1, Sections 7.4 and 8.6 and in the SIMP SEIS Volume 4, Appendix D2, Section 3.4]).

39	IRC	Social	SIMP	The EIS Social Impact Management Plan refers to plans still to be drafted. None of the plans address information or responses regarding the impact of the project and the cumulative effects as future projects are approved on the development of a long term sustainable regional population which will underpin a locally resident skilled workforce for the existing agricultural industries.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	As advised by the CG's Office the proponents are expected to address direct impacts arising from the Projects. Cumulative impacts will be addressed by the State initiatives of Royalties for Regions and Regional and Resource Town Action Plans.
39	IRC	Transport	Road impacts	The development will significantly impact service levels of road and transport infrastructure locally. It should be noted; the current level of infrastructure integrity and resilience is substantially below delivering capacity to provide any security to the operation in adverse weather conditions. This will also compromise the investment integrity and the project resilience to meet production targets. Furthermore the infrastructure proposed will be periodically destroyed during the life of mine. The EIS does not address the rapid reinstatement of infrastructure in sub optimal conditions in a remote location which has a serious deficiency in infrastructure natural raw materials.	The EIS must address road transport impacts from construction through life of mine. This must also include capacity to manage supply chains over the project's life-span during adverse weather conditions.	Vols 2 and 3, section 11 Vol 4, App W and AG	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). Details on the assessment of hazard and risk associated with adverse weather was included in Volume 2 Section 12 of the EIS. Adani is working with IRC/Queensland Government working group to develop an infrastructure agreement for upgrade and maintenance of local roads (SEIS Volume 4, Appendix G, Commitments Register, Commitment R10.10).
39	IRC	Water Resources	Water supply, Groundwater, flooding	The current proposal does not contain long term flooding or drought modelling and is unacceptable to Isaac Regional Council. The current proposal will destroy the local economy as it is highly reliant on the unique ground water sources to sustain operations.	The assessment must seriously address the process of securing and allocating significant additional water resources to the locality in a manner that does not compromise the existing rural industry uses. The EIS report should accurately and unequivocally address and identify sources that will ensure sufficient water is available for operations especially under drought conditions and forecast climate change.	Vol 2 and 3, section 6 Vol 4, App P and AB	Flood risk related impacts are addressed in SEIS Volume 4, Appendix K4, Flood Study and in Appendix K5, Revised Mine Hydrology Impact Assessment Report. Groundwater level impacts on other local groundwater water users and local have been assessed in Volume 4, Appendix K1, Updated Mine Hydrogeology Report. Further information on impacts on Springs is included in SEIS Appendix K6, Addendum to Mine Hydrogeology Report. Adani has also made a commitment to 'make good' any residual impacts on local groundwater users for example by supplementing the supply with existing water (Section 7.6.2).
39	IRC	Water Resources	Water supply, Groundwater, flooding	The present document does not reflect the ongoing sustainable management of this finite water resource. Dewatering of the operation will significantly impact the local hydrology near and around the site for a considerable (intergenerational) time period. Limited information is available on the interaction between the perched riparian water sources and the long term at depth aquifers. This area of concern is one of Council's highest priorities as it has the potential to ruin intergenerational sustainable agriculture in the region.	The EIS must establish a detailed analysis of managing and protecting aquifers in the area. Given the extensive de-watering which will occur, more reliable analysis needs to be undertaken on the effects this will have on the surface and perched water tables, before final comments can be provided in this specific area.	Vol 2 and 3, section 6 Vol 4, App P and AB	SEIS Volume 4, Appendix K1, Update Mine Hydrogeology Report now includes a revised and improved calculations of interaction between surface water resources in the Carmichael River and underlying groundwater resources (Section 5.6.7 and 5.7.5). Adani has also made a commitment to mitigate any observed impacts using measures such as the diversion of minor creeks and/or discharge of suitably treated mine inflows to the river (Section 7.6.6). Impacts of the proposed development are described and assessment in SEIS Appendix: - K1 Updated Mine Hydrogeology Report - K5 Revised Mine Hydrology Impact Assessment Report - K6 Addendum to Mine Hydrogeology Report.
39	IRC	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The EIS should clearly detail the cumulative effect of green-house gas production of the FIFO and DIDO operational workforce for the project and propose local offset programs to deliver carbon neutral transport for the project.		Vol 2 and 3, section 8 Vol 4, Apps T and AE	Transport of workers via FIFO and DIDO is classified as Scope 3 emissions as these are reported by the transport operator, i.e. aircraft emissions are reported by the air operator and not by Adani. Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
39	IRC	Transport	Transport of inputs and outputs	Cumulative impacts of fuel transport & storage are not adequately managed on a regional basis. Treating this element in isolation delivers a substantial weakness to the project's long-term resilience during challenging weather conditions and thereby flawing the investment strategy.	The EIS should identify the altematives and implement modified fuel transport arrangements for the hydrocarbon fuels to be used in the project.	Vols 2 and 3, section 11 Vol 4, App W and AG	The EIS consider the use of alternative transport methodologies for fuels. Consultation with Aurizon regarding the use of the existing rail network for these purposes is ongoing. Adani will consider during the operational phase of the project the feasibility if using the Carmichael Coal Rail Line for fuel transport.
39	IRC	Transport	Road Impact Assessment	The existing EIS project traffic assessment promotes the Gregory development Road as the preferred transport corridor for all supplies to the site. Cumulative impacts from alternative work travel paths must be considered given the maintenance hierarchy. In particular the capacity of surrounding rural road infrastructure will be impacted.	The EIS should clearly identify any transport reallocation on rural roads on or adjacent the project site.	Vols 2 and 3, section 11 Vol 4, App W and AG	Noted. A revised Traffic Impact Assessment has been prepared for the SEIS (Volume 4 Appendix P). This report identified transport of workers to and from the mine site. An assessment of the traffic impacts to the local roads as a result of the Project has been undertaken and included in Volume 4, Appendix P Traffic Impact Assessment report.
39	IRC	Transport	Road Impact Assessment	The EIS identifies the traffic volumes in the proposal as beyond the thresholds acceptable to Main roads. Will the project reinstate any long term damage to the infrastructure as a result of the development proceeding?		Vols 2 and 3, section 11 Vol 4, App W and AG	Noted. A revised Traffic Impact Assessment has been prepared for the SEIS. This report identified transport of workers to and from the mine site.
39	IRC	Cumulative Impacts	Service delivery	The EIS clearly avoids an integrated assessment of the project impacts in relation to other projects under consideration. This flaw in the assessment fails to identify numerous opportunities for integrated success in shared service delivery. By not acknowledging the opportunities, the proposed infrastructure investment strategy is compromised and delivers isolated sub-optimal solutions.	The EIS should connect multiple integrated solutions to regional participants to reinforce the investment decisions being made and provide greater levels of immunity and resilience to core service infrastructure.	Vol 1, Section 8	Adani has discussed potential co-location opportunities in the EIS Volume 1 Introduction Section 1.6 for rail and power infrastructure. Adani is willing to consult with neighbouring coal mining projects for other opportunities where required.
39	IRC	Social	Workforce management	The proposed workforce employment model of regional and local employment options is intrinsically undermined by the 100% FIFO model. This contradiction clearly undermines the integrity of the EIS and limits future opportunities for sustainable regional employment over the generations attached to this project. Exporting economic development undermines the local regional economy and weakens the sustainability and resilience of the Isaac Region.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	SIA SEIS Volume 4 Appendix D1 Sections 6.3 and 6.4 provide a justification for using FIFO workforce and Adani's commitment to considering DIDO or BIBO arrangements out of regional centres including Clermont, Emerald and Charters Towers once road infrastructure is improved. Considering the potential traffic volumes, reliable all-weather access roads are required, including between the Gregory Developmental Road and the Project (Mine) site. Adani will continue to engage with IRC and local businesses for the development of local businesses, these are addressed in the SIMP SEIS Volume 4 Appendix D2 Section 3.6.
39	IRC	Social	Workforce management	The EIS Social Impact Assessment discourages DIDO limiting regional employment opportunities. Why has the EIS not considered roster DIDO/BIBO/FIFO from Clermont which will diversify and develop employment resilience and integration with local skilled training solutions. This will develop and enhance locally based skilled contracting workforces to minimise breakdown repair delays. The EIS fails to address this local opportunity to develop a highly skilled intergenerational workforce to sustain the investment over the project life.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	SIA SEIS Volume 4 Appendix D1 Sections 6.3 and 6.4 provide a justification for using FIFO workforce and Adani's commitment to considering DIDO or BIBO arrangements out of regional centres including Clermont, Emerald and Charters Towers once road infrastructure is improved. Considering the potential traffic volumes, reliable all-weather access roads are required, including between the Gregory Developmental Road and the Project (Mine) site. Adani will continue to engage with IRC and local businesses for the development of local businesses, these are addressed in the SIMP SEIS Volume 4 Appendix D2 Section 3.6.

39	IRC	Social	Workforce profile	It is of fundamental concern to Council and the wider community that realistic integrated employment and skill development solutions have not been presented or developed as part of the proposed Project EIS or Social Impact Assessment. This in tum would substantially enhance the positive management of fatigue in the operational workforce for the project.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	Training and skills development programs will be developed as part of the project, refer to SIA SEIS Volume 4, Appendix D1 Sections 8.6, 8.7 and SIMP SEIS Volume 4, Appendix D2 Section 3.5, 3.6.
39	IRC	Hazard and Risk	Public health and safety	The EIS does not propose any meaningful solutions to disaster management or medical services for the project and leaves the local services to take responsibility. This is unsustainable as a local service provider and volunteer base is essential to assist in times of emergency under the normalised community model. A workable solution must be found or else the project will be left exposed and lives at risk. A failure to have workable solutions for emergency responses is not acceptable to Isaac Regional Council as it will draw down existing levels of service in the region.		Vols 2 and 3, Section 12	Medical Facilities will be established at the mine site and Mine Workers Accommodation Village in accordance with relevant legislative framework. Adani will continue to engage with emergency service providers throughout the life of the mine.
39	IRC	Social	SIMP	The EIS should deliver a Social Impact Management Plan for the proposed temporary construction camps as these facilities will have a lasting effect on the local community from the outset of the project.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	The management of constructions will be undertaken by the camp contractor in accordance with the Integrated Housing Strategy, refer to SIMP SEIS Volume 4, Appendix D2 Appendix B.
39	IRC	Social	Transport of workers	The project proposes to utilise Moranbah Airport for the construction workforce to access the region. The EIS does not describe the implications of this model which will compound existing and planned construction programs across the existing Bowen Basin.		Vols 2 and 3, Section 11.2.5	EIS Volumes 2 and 3, Section 11.2.5 describes the existing airport facilities in the region which will be utilised for construction workforce transport. However this will be for a short duration (estimated at 12 months construction period) until the Project airport is operational. It is assumed that the workforce at the temporary camp Site 1 could utilise Moranbah airport for the period when the project airport is being constructed. The total workforce constructing the eastern end of the Rail are estimated at 400.
39	IRC	Social	Workforce Accomodation	There is no reference in the accommodation strategy regarding the initial set up of temporary accommodation. Council is opposed to utilising and extending existing temporary camps to serve the project as this compounds negative impacts across the region's communities.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	Initial set up of temporary camps at the mine site is discussed in the Integrated Housing Strategy SIMP SEIS Volume 4, Appendix D2 Appendix B.
39	IRC	Social	Workforce Accomodation	The proposed location of the accommodation camp does not provide sufficient detail on the dust buffer zone mitigation.	Council requests design features be planned for life of mine project including noise, vibration, level of building fabric construction and design resilience to prevent rework and cycling of fatigued building structures into the waste stream.	Vol 1, Section 3 and 4 Vol 4, Apps F and G	Revised modelling of air quality impacts has been undertaken based on the revised mine plan and location of the workers accommodation village. The results of this modelling are include in the Air Quality Report (SEIS Volume 4, Appendix L).
39	IRC	Social	Workforce management	The EIS and Social impact assessment proposes no meaningful solutions to local security and unlawful activity being properly reported through the local resident police force. It is unacceptable a population of 2000 plus persons is not managed in this context and reflects a clear desire to avoid established normal social standards within the Isaac Region. If this is not addressed the community will be affected by substantial anti and unlawful social behaviours.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	Workforce management and management of the workers accommodation village and camps are described in SIA SEIS Volume 4, Appendix D1 Sections 7.4, 8.5, 8.6 and SIMP SEIS Volume 4, Appendix D2 Sections 3.4, 3.5 and Appendix B. Also Adani is engaging with QPS to develop suitable management measures (see response to QPS submission).
39	IRC	Hazard and Risk	Public health and safety	The location of a considerable population out of established urban centre exposes the project resilience to substantial risks associated with medical, ambulance services and the business services associated with the population density.		Vols 2 and 3, sections 12	Comments are noted.
39	IRC	Social	Workforce management	The EIS does not reflect sufficient detail surrounding social norms of the 457 visa international recruitment where equal employment opportunities exist for women in management positions; the perception of safety for women or the capacity to delivery and address appropriate cultural requirements e.g. halal, kosher in an isolated location.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	Considerations for equal opportunities for multicultural workforce and women and Indigenous people are addressed in the Workforce Management strategies, refer to SIA SEIS Volume 4, Appendix D1 Sections 8.6 and SIMP SEIS Volume 4, Appendix D2 Section 3.5.
39	IRC	Social	SIMP	Council recognises social impact strategies have not been completed. This is a fundamental flaw in the EIS which will significantly compromise positive outcomes. Will they be recognised and monitored by Coordinator General's Office over the life of the mine; will they focus on developing intergenerational partnerships and a regionalised methodology?		Vol 1, Section 4 Vol 4, App G	A SIMP has been developed for the Project refer to SEIS Volume 4, Appendix D2.
39	IRC	Social	SIMP	The EIS describes a SIMP for a 10yr period. How are the proponents preparing for ongoing operations and community over the remaining 80 years of life of mine?		Vol 1, Section 4 Vol 4, App G	As stated in SIMP SEIS Volume 4, Appendix D2 Section 2.6 Adani will have overall responsibility for the development, implementation and monitoring of the impact management strategies, some responsibilities of impact management will be devolved by and allocated to the relevant construction and operations contractors. Based on advice from OCG, Adani will monitor and review impacts and management strategies on an annual basis during each year of construction and on an annual basis during the first two years of operations. It is anticipated that thereafter the operations impacts arising from the Project will stabilise. From that point onwards impacts will be monitored and management strategies will be updated annually and reported in the company's annual reporting processes.
39	IRC	Social	SIMP	Under the present proposed state transition from SIMP to CIA, what is obligation to implement the SIMP by the proponent?		Vol 1, Section 4 Vol 4, App G	Adani will implement the key/overarching Social Impact Management Strategies which consolidate the various mitigation and management measures developed in the Project SIA and SIMP reports (SEIS Volume 4 Appendix D1 and D2). These are highlighted as commitments in SEIS Volume 4, Appendix G Project Commitments Section 2.1.1. Future changes in legislation will not affect the approval conditions.
39	IRC	Introduction	Supporting infrastructure	The full impacts of the delivery of power and water infrastructure to the site has not been investigated at sufficient detail at all to provide a high level of confidence in the investment model		Vol 1, section 1	Noted. 3rd party provision of water and power is outside the scope of this EIS process and will be subject to separate assessment.

39	IRC	Land	Offsite infrastructure assessment	The following points represent significant concerns for the project's infrastructure area; • Proposed levels of road flood immunity for the arterial and local roads. • Road heirarchy within the accommodation camp • The traffic impact assessment for internal road and infrastructure surrounding the airport • Increased slope erosion. • design and construction of the accommodation village	• The EIS must provide a detailed road hierarchy for the proposed internal roads (local) and cross sections in the accommodation camp. • The proposed water, sewer and road layout needs to be amended to provide sound master planning and infrastructure location to facilitate maximum future options/ urban uses. • The traffic impact assessment for internal road and infrastructure surrounding the airport must be delivered under a single and cumulative use models. • Council seeks further clarification as to why a suitable natural land fall is modified by cut and fill operations which will increase the slope acerbate erosion. • Council has a preference for the design and construction of the accommodation village to form part of development application through Council • The overall design of the accommodation camp must be discussed with Council prior to finalising the plan for development of water, sewerage and road. • Due to the intensity of the development Council seeks full grade separation in all instances of rail and road transport conflicts.	Vol 4, App Z1	Ongoing consultation will be undertaken with IRC to further develop mitigation and management measures for offsite infrastructure. These measures are to be included within the development applications for the offsite infrastructure area. Project approvals triggered under the IRC Planning Scheme will be submitted to IRC in accordance with SP Act 2009. Offsite applications for the industrial precinct, mine workers accommodation and airport are provided in SEIS Volume 4, Appendix C4.
39	IRC	Social	Workforce management	The following issues represent strategic planning concerns with the EIS and documentation: • At this time, the workforce model is 100% FIFO. Is there an opportunity to change this in the future? What is the likelihood of change and normalisation of the urban centre given the mine will exist for 6 generations? • With FIFO & DIDO some families will move to Clermont or the Isaac Region in general to be closer to their families. Will the accommodation camp allow for families to visit and will it be family friendly? What is the strategy to ensure Clermont has the capacity to accommodate the additional social impacts especially relating to emergency and health services? • What will be the links between the accommodation camp and Clermont? • More detail is required on the structure of the work force to provide meaningful comment regarding social impacts. The present EIS is substantially devoid of detail. • What are the proposed integration models with the existing local community in areas such as services and shops?	• With reference to the workforce model of 100% FIFO, the accommodation camp should be designed so it can be used in the future for a town. The life of the mine and the likelihood other proposed projects will seek to cooperatively use the camp will increase numbers and timeframes further than 90 years. • More extensive design and implantation detail is required on the scope of the permanent Master Plan for the mining accommodation.	Vol 1, Section 3 and 4 Vol 4, Apps F and G	Consideration for FIFO, DIDO, BIBO workforce and local business development are discussed in SIA SEIS Volume 4, Appendix D1 Sections 8.6 and 8.7 and SIMP SEIS Volume 4, Appendix D2 Sections 3.5, 3.6.
39	IRC	Social	Temporary Rail Camps	• More detail is required on the option of one or several of the temporary rail camps staying for maintenance purposes, given the likelihood of infrastructure loss over the life of mine and the need to repair / reinstate in unfavourable conditions.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	The Project Description in the EIS and SEIS describes ongoing permanent facilities required for the project. This does not include the need for retention of the temporary rail camps for permanent purposes. The Mine Workers Accommodation Village is the central accommodation facility. A rail maintenance depot at the western end of the Rail is described in the EIS, along with other permanent laydown areas. This detail is updated in the SEIS under Volume 3 Section 2.
39	IRC	Economics	Regional business opporunity	• Is there the opportunity to develop more remote natural area tourism associated with the upgraded access provided to the project?		Vol 1, Section 6 Vol 4, App H	Comments are noted.
39	IRC	Introduction	Relevant Legislation and Project Approvals	• Council would prefer the mine accommodation to be applied for under SPA and not be declared a State Development Area (in any form). Council rejects the intervention of the State planning process as it removes local democratic representation.		Vol 1, Section 1.9	Adani is in discussions with the Office of the Coordinator-General about the declaration of the area of land relating to the Project (Rail) and the Project (Offsite Infrastructure) as an SDA. Adani has also included applications under the Sustainable Planning Act 2009 (SP Act) in the SEIS, Appendix C4 (Offsite infrastructure approval applications).
39	IRC	Land	Land Use and tenure	• What are the wider impacts of the project on the rural properties? Has consideration been given to that the resident population on the rural properties utilising (and perceiving) the mining as a local service centre?		Vol 2, section 4.4	Noted. Impacts of the project on the resident population is assessed in the SIA and SIMP prepared for the SEIS.
39	IRC	Land	Land Use and tenure	• The future sourcing of long term quarry resources has not been adequately addressed in the EIS. This is especially important regarding the assured loss of the infrastructure is at times during the project life. • Where does the cumulative total of material come from that will build the roads and rail line and renewal of infrastructure when it is damaged by natural events over the mine life?		Volumes 2 & 3 Chapters 4 (c4)	Five quarries are proposed for the Project. Information regarding the assessment of the quarries is provided in Quarry Approvals Documentation (refer to SEIS Volume 4 Appendix C2 Quarry Approvals Documentation).
39	IRC	Transport	Workforce transport	• How will residents of the 2000 permanent accommodation rooms be transported to the site and by what route?		Vol 2, section 11	Noted. A Traffic Impact Assessment has been prepared for the SEIS. This report identified transport of workers to and from the mine site. There have been no changes to the transport of workers from the EIS to the SEIS.
39	IRC	Social	Housing	• The report states there will be a cumulative effect of the mining development which will increase shortages in housing supply and decrease housing affordability in the long term.		Vol 1, Section 3 and 4 Vol 4, Apps F and G	Comments are noted.
39	IRC	Social	Housing	• It is stated in the EIS that Adani is actively engaging with IRC and the community to address affordable housing within Moranbah and Clermont. What meaningful engagement has occurred to date and what strategies will be put in place prior to project commencement?		Vol 1, Section 3 and 4 Vol 4, Apps F and G	As stated in SIMP SEIS Volume 4, Appendix D2 Section 3.4 Adani will continue to monitor impacts on housing and engage with IRC to develop suitable management strategies.
39	IRC	Project Description	Offsite infrastructure assessment	• The proposed industrial area is too close to the air strip to provide adequate bird strike separation. • The air strip should be isolated as the industrial area will attract additional birds which could lead to bird strike frequency increasing at the air strip.		Vol 4, App Z1	Noted. In the EIS the siting of the airport was located to the north of the rail line and close to the boundary of the mining tenure. The airport location has been changed to the south of the rail line, nearer to the worker accommodation village. One of the factors leading to the revised location are were expressed concerns regarding potential bird strike as a result of the location of the airport.
39	IRC	Land	Land Use and tenure	• All proposed railway access roads should be adequately fenced off and provide appropriate access for existing agriculture users and ensure cattle can still use the land on either side and access water.		Volumes 2 & 3 Chapters 4 (c4)	Adani has committed to installing a fence along the rail corridor (SEIS Volume 4, Appendix G Commitments Register, Commitment R 4.45).

39	IRC	Water Resources	Flooding	In the event of a flood , the EIS does not adequately address how Carmichael Coal is going to address the issue of prolonged submersion of the floodplain on the upstream side of the railway line. Prolonged submersion will affect the production of this land for a considerable time after flood waters have subsided and impinge upon the agricultural viability of enterprises significantly.		Vol 3, section 6 Vol 4, App AB	Flooding impacts for the Rail alignment have been assessed in accordance with the ToR which includes predicted afflux levels and flooding durations. An updated Rail Flood study is included in the SEIS (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders and flooding impacts is provided in SEIS Volume 3, Rail studies Section 4.3.8.
39	IRC	Project Description	Relevant Legislation and Project Approvals	How will Adani address extreme development change in the immediate area of the region?		Vol 1, section 1.9	Comment noted. Economic changes have been included within the updated Economic Impact Assessment (refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
39	IRC	Economics	Regional business opporunity	How does Adani ensure that local procurement remains a priority for the company regardless of legislative requirements and changes over time?		Vol 1, Section 6 Vol 4, App H	Adani has provided a commitment in the SIMP for the development and implementation of local procurement policies. The SIMP will form part of the CG approval and therefore will be applicable for the life of the Project.
39	IRC	Hazard and Risk	Public health and safety	What is the Adanilcontractor strategy for the management of communicable disease outbreaks and quarantine in the locality as no permanent medical facility is proposed for the operation?		Vols 2 and 3, sections 12	Comments are noted.
39	IRC	Water Resources	Water supply	What is Adani's strategy to manage water supply (including bores, springs, aquifers, dams) within the region in the event of a 1-100 year drought OR water contamination scenario over the longer term.		Vol 2, Section 2.12.3 page 2-89 Volume 4, Appendix P2 - Preliminary Water Balance	Additional capacity has been proposed for the mine site to supply water for up to 12 months. In the case of extended periods of drought the mine operation will be adapted (e.g. reduce production).
39	IRC	Transport	Transport of inputs and outputs	What is Adani's strategy for goods/freight delivery to site including disaster management of fuel and dangerous goods?		Vol 4. Appendix AG, section 6. Impact Assessment and Mitigation Measures – Construction Phase And Vol 3. Rail Project, 11.3 Potential Impacts and Mitigation Measures	Noted. A revised Traffic Impact Assessment has been prepared for the SEIS. Additionally, a Hazard and Risk Assessment was conducted for the EIS which considered road transport impacts and incident management. An assessment of the traffic impacts to the local roads as a result of the Project has been undertaken and included in Volume 4, Appendix P Traffic Impact Assessment report.
39	IRC	Social	SIMP	If there is a transition from legislative SIMP's, what is the obligation of the company to fulfil commitments?		Vol 1, Section 4 Vol 4, App G	Adani will implement the key/overarching Social Impact Management Strategies which consolidate the various mitigation and management measures developed in the Project SIA and SIMP reports (SEIS Volume 4 Appendix D1 and D2). These are highlighted as commitments in SEIS Volume 4, Appendix G Project Commitments Section 2.1.1. Future changes in legislation will not affect the approval conditions.
39	IRC	Project Description	Relevant Legislation and Project Approvals	How does the creation of a new residential footprint align with the aspirations of regional plan?		Vol 1, section 1.9	Noted. The assessment of the residential footprint against the regional plan is discussed within the development application for the workers accommodation village. For full details, please refer to Volume 1 Chapter 4 (Approvals) and Volume 4 Appendices C1 and C4 (Offsite Infrastructure).
39	IRC	Social	Training and Apprenticeships	How does Adani propose to address the mining industry skills gap for skilled mining industry workers and train future apprentices?		Vol 1, Section 4 Vol 4, App G	Need for training and skills development to address skills gaps is recognised and addressed in SIA SEIS Volume 4, Appendix D1 Section 8.6 and SIMP SEIS Volume 4, Appendix D2 Section 3.5.
39	IRC	Social	Training and Apprenticeships	Does Adani propose to set up and contribute to any apprentice training programs for local and regional residents?		Vol 1, Section 4 Vol 4, App G	Need for training and skills development to address skills gaps is recognised and addressed in SIA SEIS Volume 4, Appendix D1 Section 8.6 and SIMP SEIS Volume 4, Appendix D2 Section 3.5.
39	IRC	Social	SIMP	Who do you define as Adani's community of interest for community development fund?		Vol 1, Section 4 Vol 4, App G	As per project's local study area and community development fund program outlined in SIA SEIS Volume 4, Appendix D1 Section 2.5 and SIMP SEIS Volume 4, Appendix D2 Section 3.9. SIMP has been updated to reflect the consultation process to finalise the social impact management strategies. IRC listed as a stakeholder. Refer to SEIS Volume 4, Appendix D2.
39	IRC	Project Description	Relevant Legislation and Project Approvals	What is/are the trigger/s that results in a transition from worker's accommodation villages into a town? (closed or open) o How is the transition defined? o Who is the authority responsible? o How is it mitigated/managed?		Vol 1, section 1.9	Comments are noted.
39	IRC	EMP - Mine	Rehabilitation	What is the closure plan including landform, decommissioning and management?		Vol 2, section 13.34	Please refer to SEIS Appendix 4 - Appendix R1 and R2 for the Closure and Rehabilitation Strategies for the Mine and Offsite area, respectively for additional information.
39	IRC	Project Description	Relevant Legislation and Project Approvals	What is the expectation (State/Federal/proponent) for management of future commercial, residential, industrial development within a 50km radius of the project site that is attributed to the socio-economic opportunities of the developing Galilee Basin? o Zoning implication o Leasing implications o Infrastructure provision and maintenance o Core service provisions o LGA Authority • Regulated responsibilities • Expectation of services by community/federal/state o Sustained agriculture production o Other commercial opportunities to utilise rail outside of mining industry o Fuel haul		Vol 1, section 1.9	The EIS and SEIS have assessed cumulative environmental, economic and social impacts as per the ToR. Please refer to the SEIS Volume 1 Section 8, Volume 4 Appendix D1 and Volume 4 Appendix E.

39	IRC	Hazard and Risk	Hazard and Risk	What is the mitigation strategy for disaster management (flooding or otherwise) when the workforce is unable to leave site or site is inaccessible, including railway reconstruction? o During construction o During operation o Including liquid waste disposal		Volumes 2 and 3, section 12	Adani will develop a Disaster Management Plan for both Mine and Rail in consultation with emergency service providers, as required, prior to commencement of work onsite. This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Commitments M11.34 and R11.41.
39	IRC	Project Description	Relevant Legislation and Project Approvals	How will it be guaranteed that the development of strategies named in Adani's commitments will be done in collaboration with Council, the community and other key stakeholder to deliver best practice outcomes? o Who is the authority? o Will the strategies be publicly available? o What is the time line? o How will they be enforced?		Vol 1, section 1.9	Site based Emergency Response Plans will feed and align with the Crisis Management Plan.
39	IRC	Project Description	Relevant Legislation and Project Approvals	What are the ongoing governance requirements legislative and other? (including company policies, compliance, ongoing management)		Vol 1, section 1.9	In regards to ongoing environmental management in order to implement monitoring and mitigation measures, please refer to the project EMPs under SEIS Volume 4, Q1 (Mine), Q2 (Offsite), W (Rail).
39	IRC	Project Description	Relevant Legislation and Project Approvals	What are the strategies to ensure legislative change does not reduce the impact mitigation responsibilities in the local area?		Vol 1, section 1.9	Comments are noted.
39	IRC	Water Resources	Water supply	Where is the water source and how will it be monitored for sustainability?		Vol 2, Section 2.12.3 page 2-89 Volume 4, Appendix P2 - Preliminary Water Balance	The updated Project Description (SEIS Volume 4 Appendix B) and Mine Water Balance (SEIS Volume 4 Appendix K2) provide an updated on project water requirements and sources for input water.
39	IRC	Social	Workforce management	What are the implications of social isolation and what mitigation strategies are proposed?		Vol 1, Section 3 and 4 Vol 4, Apps F and G	Impacts of social isolation are recognised in the workforce impacts and are addressed under workforce health, safety and wellbeing in SIA SEIS Volume 4, Appendix D1 Section 8.6. and SIMP section 3.4.
39	IRC	Air quality	Air quality monitoring and management	What is the strategy for nuisance dust, noise, vibration that is below regulated levels for surrounding residents including the village?		Vols 2 and 3, section 7 Vol 4, Apps S and AD	Mitigation measures for nuisance impacts are included to minimise impacts even when levels are within guideline values. Measures have been included for dust and noise impacts in the Project Environmental Management Plans (SEIS Volume 4, Appendices Q1, Q2 and W).
39	IRC	Noise and Vibration	Noise and Vibration	What is the strategy for nuisance dust, noise, vibration that is below regulated levels for surrounding residents including the village?		Vol 1 Chapter 10 List of Proponent Commitments; Vol 3 Chapter 9 Noise and Vibration; Chapter 13 Draft EMP; Vol 2 Chapter 14 EMP (off site); App U tabels 3.6 and 3.7	Refer to comment on issue 39BU Mitigation measures are included to minimise impacts even when levels are within guideline values.
39	IRC	Introduction	Consultation	What is the internal and external communications strategy for: o Disaster management communications o Stakeholder communication o Local govemment communications		Vol 1, section, 1.8 Public consultation process	Stakeholder engagement strategy has been developed for the project as outlined in SEIS volume 4, Appendix D2.
39	IRC	Introduction	Supporting infrastructure	What is the strategy for ICT infrastructure supply and maintenance? o NBN and general day to day communications (e.g. phone towers)		Vol 1, section 1	Comment noted. The scope of work for the Project's communications covers the provision of the fibre optic backbone on the mine lease. The fibre optic backbone is provided by running OPGW wires on the 66 kV overhead power lines on site which links the Galilee North Substation to all major areas of site including the North, South and Central MIA. The fibre optic backbone is further provided by following the conveyor routes linking all motor control centres and control rooms. This provides a single fibre optic network covering all assets on the mine lease.
39	IRC	Economics	Economic impact assessment	What will be the economic effect on existing local businesses including farmers and graziers?		Vol 1, Chapter 6 Vol 4, App H	Noted. A revised economic assessment has been undertaken for the SEIS (refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report). This assessment documents impacts on local businesses.
39	IRC	Air quality	Coal dust management	How will the impact from coal dust and subsidence on the Great Barrier Reef via the Carmichael River be mitigated?		Vol 3. Rail Project, Page 13-42, 13.5.6 Air Quality, Management Plan	Please refer to SEIS Volume 4 Appendix H in regards to an assessment of impacts to matters of national environmental significance including the GBR.
39	IRC	Matters of National Environmental Significance	Great Barrier Reef Marine Park	How will the impact from coal dust and subsidence on the Great Barrier Reef via the Carmichael River be mitigated?		Vol 2, Section 4.2	Please refer to revised MNES Report in SEIS Volume 4, Appendix H for a discussion on potential impacts on the Great Barrier Reef.
39	IRC	Social	Workforce management	Why is the opportunity not being given for BIBO/FIFO from Moranbah or Clermont?		Vol 1, Section 3 and 4 Vol 4, Apps F and G	Consideration for FIFO, DIDO, BIBO workforce and local business development are discussed in SIA SEIS Volume 4, Appendix D1 Sections 8.6 and 8.7 and SIMP SEIS Volume 4, Appendix D2 Sections 3.5, 3.6.
39	IRC	Social	Workforce management	Why is the option to FIFO from the Clermont and other regional airports not available?		Vol 1, Section 3 and 4 Vol 4, Apps F and G	FIFO operations will fly between nominated collection points along the east coast to the private airstrip located within the offsite infrastructure area. Optimal collection points will be determined after full consideration to skilled workforce availability in the immediate vicinity of airports, airport capacity and flight schedule performance, surrounding infrastructure such as public transport, parking and training facilities to ensure long term efficient and reliable transit for workers. Refer to SIA SEIS Volume 4, Appendix D1 Sections 8.6 and 8.7 and SIMP SEIS Volume 4, Appendix D2 Sections 3.5, 3.6.
39	IRC	Transport	Road Impact Assessment	How will Adani manage and maintain road infrastructure from Moranbah, Clermont and Charters Towers? o Including scenarios of potential changes to workforce structure (i.e. DIDO) and subsequent development in the Galilee Basin.		Vols 2 and 3, section 11 Vol 4, App W and AG	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). . Adani will continue consultation with and undertaken agreements with DTMR in regards to impacts to road infrastructure on the State Controlled road network.

39	IRC	Water Resources	Water Quality	What is Adani's strategy to proactively manage acid sulphate soils and salinity issues including resulting runoff into water supply out of the catchment area?		Vol 2, section 6.4, Section 13.19 Vol 4, App Q	Stormwater runoff to be directed into the Carmichael River will originate from undisturbed catchments and will therefore not change the concentration of salt in the runoff from the existing condition. Discharges into the Carmichael River from the mine site will be in accordance with licenced release limits. Soil assessments undertaken for both Mine and Rail (EIS Volume 4, Appendices L and Y) indicate no presence and extremely low probability of encountering ASS, respectively therefore an assessment methodology is not required.
39	IRC	Land	Topography, geology and soils	What is Adani's strategy to proactively manage acid sulphate soils and salinity issues including resulting runoff into water supply out of the catchment area?		Vol 2, Section 4.2, Section 13.26 Vol 4, Vol L	Mine water management is further described in the SEIS Volume 4 Appendix K2 Revised Water Balance. In case of acid mine drainage, water will be treated through neutralization. The nature of exact treatment will depend upon the water quality. Updates to soil management including runoff have been included with the Project draft EMPs (refer to SEIS Volume 4 Appendix Q1 draft EMP - Mine). Soil assessments undertaken for both Mine and Rail (EIS Volume 4, Appendices L and Y) indicate no presence and extremely low probability of encountering ASS, respectively therefore an assessment methodology is not required.
39	IRC	Land	Stock routes	How do Adani propose to realign the stock route to ensure existing business can continue operations without adding undue distances for stock movement?		Volumes 2 & 3, Sections 4.4	Comments regarding stock route management have been noted. Realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders throughout the EIS process.
39	IRC	Water Resources	Water supply	How will Adani supply potable water and sewerage services including disposal of waste to temporary rail camps including during flood and drought periods?		Volume 3, Sections 2, 6 and 10	Adani will develop a Disaster Management Plan for both Mine and Rail in consultation with emergency service providers, as required, prior to commencement of work onsite. The plan will include management measures for supply of potable water and sewerage services during extreme events such as flooding and drought. This commitment is included in the revised Project Commitments Register, SEIS Volume 4, Appendix G Commitments M11.34 and R11.41.
39	IRC	Social	Workforce management	What is the workforce recreation strategy?		Vol 1, Section 3 and 4 Vol 4, Apps F and G	Recreational facilities available for the workforce at the accommodation facilities are stated in the Integrated Housing Strategy SIMP SEIS Volume 4, Appendix D2 Appendix B.
39	IRC	Project Description	Design criteria	Why will the rail lines be constructed at Q50 not Q100/150 especially over flood prone areas?		Vol 3, section 2.3.2	Please refer to revised rail Flood Modelling report in SEIS Volume 4, Appendix S1 for commentary on design criteria and standards.
39	IRC	Waste	Waste management	What will the onsite and offsite landfills take as waste, where will they be located and how will this affect the quadruple bottom line?		Vol 2, section 10.1	No landfills are proposed for the Project, refer to the SEIS for further details on waste management in Volume 4 Appendices Q1, Q2 and W.
39	IRC	Waste	Waste management	What is the purpose of using bio solids for soil conditioning?		Vol 2, Section 10.1.4.2, Table 10-2	Soil conditioning trials will investigate the introduction of organic material (such as biosolids) in order to develop soil products suitable for rehabilitation purposes. Trials to be conducted in accordance with all relevant legislative guidelines.
39	IRC	Waste	Waste management	What is the long term recycling strategy and what economic models are proposed?		Vol 2, Section 10.1.4	Please refer to the SEIS for further details on waste management in Volume 4 Appendices Q1, Q2 and W. This includes details on recycling. Long term waste management strategies will be developed in accordance with relevant legislative requirements.
39	IRC	Waste	Waste management	How will methane from landfills be monitored and managed?		Vol 2, Section 10.1.5 and 13.22	No landfills are proposed for the Project, refer to the SEIS for further details on waste management in Volume 4 Appendices Q1, Q2 and W.
39	IRC	Water Resources	Water Quality	How will Adani guarantee no downstream degradation occurs due to water contamination from controlled discharges or urbanised development?		Volume 2 Section 13 Draft Environmental Management Plan Volume 4 Appendix Q Mine Water Quality Report (MWQR)	The mine water management strategy (refer to SEIS Appendix Water Balance Report) is aimed at minimising any contaminants leaving the mine. A Salt Balance has been developed to get a better understanding of salinity levels of water in storages on site and of water potentially released into the environment. In the SEIS Appendix K5 Revised Mine Hydrology Impact Assessment Report Water Quality Objectives have been determined that have to be met for any controlled releases. It is believed that any controlled releases will be relatively minimal (considering the size of the mine) and are relatively easy manageable from an environmental perspective.
39	IRC	Waste	Waste management	How will heavy metal contamination of soils be managed when reconditioning using bio solids?		Vol 2, section 13 Environmental Management Plan Volume 4 Appendix Q Mine Water Quality Report (MWQR)	Soil conditioning trials will investigate the introduction of organic material (such as biosolids) in order to develop soil products suitable for rehabilitation purposes. Trials to be conducted in accordance with all relevant legislative guidelines including application, monitoring and management.
39	IRC	Nature conservation	Pest species	How will declared weed and pest control be actively managed on site and along railway corridors, and at what intervals?		Volume 4 – Appendix N1 – Terrestrial Ecology Report – 5.4 Introduction and proliferation of weeds and feral species	Updates have been made to the Project's EMPs (SEIS Volume 4, Appendix Q1 EMP - Mine, Q2 EMP - Offsite and W EMP - Rail), with particular reference to the active control of weed presence on site.
39	IRC	Economics	Compensation for impacts	What are the criteria and/or framework which constitute the trigger for compensation and mitigation of the off-site impacts of the proposal? o Who is the independent authority for administration and reporting this?		Vol 2, section 6.3.4 Agricultural Property Management and Vol 4, App G	The EIS process identifies residual impacts, and subsequent approval requirements through State and Federal legislation provide the criteria and framework for agreements such as these to be developed and implemented. For example, Environmental Offsets under State and Federal policies.
39	IRC	Draft offset strategy	Implementation of offsets	What is the implementation plan for the offset strategy for all nature refuges? o Who/what determines the success of the offset? o What are the consequences for non-compliance or success?		Vol 4, App AH - Environmental Offset Strategy – 7.2 Delivery method	Adani conducted a comprehensive avoidance and mitigation assessment in relation to the Bygana West Nature Refuge. The location of the nature refuge requires its offsetting. Offset areas have been identified in accordance with the Australian and Queensland Government offset legislation focusing on priority GBOS properties. Please refer to revised Offset Strategy Report in SEIS Volume 4 Appendix F.
39	IRC	Waste	Mine waste management	How does Adani plan to manage stockpile and over burden weathering on site?		Vol 2, section 10.2 Mine waste	Please refer to the SEIS Mine EMP (Volume 4 Appendix Q1), Closure and Rehabilitation Strategy (Volume 4 Appendix R1). Also refer to the Mine Water Quality (Volume 4 Appendix K3) and Mine Hydrology (Volume 4 Appendix K5) reports.

39	IRC	Air quality	Coal dust management	How will coal dust from trains be managed along the entire haul route in different climatic zones?		Vol 3, 13 Draft Environmental Management Plan, Section 13.4 (Rail Chapters) Also chapter 7	Adani will prepare a Coal Dust Management Plan identifying control measures to mitigate the emission of dust from loaded and unloaded coal trains. When operating on any Aurizon Operation Ltd (Aurizon) railway line, Adani will comply with the recommendations stated in the Aurizon (2010) Coal Dust Management Plan. Please refer to SEIS Volume 4, Appendix W for the Rail EMP, Section 6.5.3 for Rail Operations related to coal dust.
39	IRC	Social	Social Impact Assessment	Why is 2006 census data used instead of 2011? Please update to ensure the EIS reflects the current statistical environment.		Vol 1, Section 3 Vol 4, App F	The social baseline is updated in the SIA SEIS Volume 4 Appendix D1 Section 3 and 4 reflecting latest publically available data.
39	IRC	General comment	General comment	What are the proponent's and State and Federal government's expectations of economic, social, community development for the life of the mine?		n/a	Comment noted. Economic expectations have been included within the updated Economic Impact Assessment (refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report). Social and community development expectations are outlined in the SIA report (refer to SEIS Volume D1 Revised Social Impact Assessment Report).
39	IRC	Social	Housing	What is the mitigation strategy for the housing market in Clermont and Moranbah if population exceeds OESR high range projection?		Vol 1, Section 4 Vol 4, App G	As stated in SIMP SEIS Volume 4, Appendix D2 Section 3.4 Adani will continue to monitor impacts on housing and engage with IRC to develop suitable management strategies.
39	IRC	Transport	Road Impact Assessment	Will the configuration of the roads be able to accommodate the demand? o Please provide road hierarchy and plan for building to Council standard .		Vol 2, Section 11 Vol 4, App W	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). Adani is working with IRC/Queensland Government working group to develop an infrastructure agreement for upgrade and maintenance of local roads (SEIS Volume 4, Appendix G, Commitments Register, Commitment R10.10).
39	IRC	Transport	Road Impact Assessment	How will the standard of Elgin-Moray Road be aligned with Council standards?		Vol 2, Section 11 Vol 4, App W	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). Adani is working with IRC/Queensland Government working group to develop an infrastructure agreement for upgrade and maintenance of local roads (SEIS Volume 4, Appendix G, Commitments Register, Commitment R10.10).
39	IRC	EMP - Mine	Rehabilitation	Rehabilitation and landscaping must use locally indigenous plants rather than plants which may become a localised pest species.		Vol 2, section 13.34	Please refer to SEIS Appendix 4 - Appendix R1 and R2 for the Closure and Rehabilitation Strategies for the Mine and Offsite area, respectively for additional information.
39	IRC	Social	Service delivery	How will human services be provided to support the population and what will the State and Federal commitment is for services locally at normal service interface?		Vol 1, Section 4 Vol 4, App G	Workforce wellbeing service will be provided for the Project workforce at the accommodation village. Other community development initiatives will be undertaken through the implementation of the community Development Fund, as stated in SIA SEIS Volume 4 Appendix D1 Section 8.9 and SIMP SEIS Volume 4 Appendix D2 Section 3.9.
39	IRC	Proponent commitments	General comment	It is impossible to assess the quality of mitigation strategies when the mitigation commitment is to develop a strategy. More information is required on all these commitments.		Vol 1, Section 10	Comment noted.
40	DEHP	EMP - Mine	General comment	The EM Plan does not meet the content requirements of section 203 of the EP Act or the information requirements under the terms of reference for the EIS. Should the EIS process be aimed at providing a draft environmental authority, these requirements will need to be fully addressed.	The following information requirements and requested changes and additions to the EIS documentation should be addressed before the EIS process is completed. The following comments are also provided for consideration in preparing the Coordinator-General's Evaluation Report (CoG Report) for this project.	Volume 2 Section 13 Draft Environmental Management Plan	Noted. As a result of legislative changes, an EMP is no longer required in support of an Environmental Authority Application. Please refer to the Draft Conditions Report in SEIS Volume 4 Appendix C6 for the revised Environmental Authority conditions. The EMP has been updated in response to submissions and project amendments, refer to Volume 4 Appendix Q1.
40	DEHP	Project description	Mine planning	The mine layout (Figures 2.4 to 2.17) does not show mining in the residual areas (the saw tooth triangles on the western boundary of EPC1690). The mine plan information overall is highly schematic and refinement/amendments would be expected as operational issues are considered. The mine layout drawings are also inconsistent with the proposed location of the flood levees on the Carmichael River. There is no draft Subsidence Management Plan to quantify the impactsof subsidence on landform, productivity, hydrology and the natural environment. It is likely that that the amount of subsidence will impact on remnant vegetating and hence also have implications for offset requirements. There is no draft Rehabilitation Management Plan setting out appropriate rehabilitation outcomes and methods per domain.	The EIS is incomplete. The issues outlined in this submission will need to be addressed before the EIS assessment process is completed.	Vol 2, section 2 Volume 2 Section 13 Draft Environmental Management Plan	A revised mine plan, subsidence report and rehabilitation plan have been developed for the Project (Mine). Please refer to SEIS Volume 4 Appendix R1 Closure and Rehabilitation Strategy - Mine, SEIS Volume 4 Appendix I1 Subsidence Assessment Report, and SEIS Volume 1 Section 3 Project Description. Adani has also developed a Draft Subsidence Management Plan, SEIS Volume 4, Appendix I2, which assesses impacts on SSBV and MNES and proposes mitigation and management measures to minimise potential impacts. Adani will work with DEHP to finalise the Rehabilitation acceptance criteria for the project, including the establishment of appropriate reference sites that are outside the direct and indirect impact from Mining Operations.
40	DEHP	General comment	Completeness	The EM Plan is incomplete including the specific information needed to draft appropriate conditions (e.g. the tables 13.42, 43. 44, 45, 46 need to be populated with quantitative information). This will be required before EIS can be completed and any EA conditions can be drafted. The offset strategy (two copies were provided at Appendix AH and AK & overview at Volume Section 9) is a framework strategy. Definitive quantitative information on State Significant Biodiversity Values (SSBV) impacts and offsets to be provided will be required from the EIS process before EA conditions can be developed. Mining stages can be considered, however, estimates of life of mine offsets should be described in the EIS.	The EIS is incomplete. The issues outlined in this submission will need to be addressed before the EIS assessment process is completed.	Vol 2, section 2 Volume 2 Section 13 Draft Environmental Management Plan	Comment noted. Revised EMPs and offset strategy has been prepared for the Project. These documents have been prepared taking into consideration submissions received. Refer to SEIS Volume 4 Appendices Q1, Q2, and W EMPs and F Revised Offset Strategy Report). Section 12 of the Offsets Strategy (SEIS Volume 4 Appendix F) provides detail on the offset implementation including landholder and stakeholder negotiation, the offset acquisition process and ongoing requirements. Tenure issues such as Native Title and the finalisation of legally binding mechanisms are also discussed in the context of the requirement to comply with all relevant State and Commonwealth legislation when finalising offset requirements. Furthermore, the Offsets Strategy includes detail on proposed timing for these activities in Section 12.2.

40	DEHP	Air Quality	Air quality impact assessment	The air quality technical reports and related EIS chapters have been prepared in accordance with the Project TOR. Air quality environmental values likely to be impacted by the Project have been appropriately identified. Existing air quality, climate, meteorology, and current emission sources have been adequately described. Ambient particulate matter background concentrations and project emission estimates have been derived using recognized methods and data sources. Appropriate air dispersion modelling tools have been used by suitably-qualified professionals to predict ground level particulate concentrations (GLC) likely to result from mining activities for three minelife scenarios. Modelled GLCs have been assessed against relevant air quality criteria. A number of air quality criteria exceedances have been predicted in future years. Dust management strategies and an air quality monitoring program have been proposed to demonstrate compliance, at least in the early life of the mine, with air quality criteria.	Existing EHP policy is that nuisance dustfall be assessed (and conditioned) on a monthly basis. The assessment described in the EIS has been undertaken on an annual basis. In this instance however, data presented suggest that nuisance dustfall is unlikely to be a major concern due to the separation distances between mining activities and sensitive receptor sites. Stated commitments in relation to dust mitigation and air quality monitoring should be adequate in addressing nuisance dustfall. In order to demonstrate that dustfall is not causing a nuisance, it is recommended that monthly monitoring and assessment is undertaken during the construction and operation of the project and is appropriately conditioned through the EM Plan and environmental authority.	Vols 2 and 3, section 7 Vol 4, app S and AD	Comments are noted and the recommendations included in relevant management plans.
40	DEHP	EMP - Rail	Coal dust management	Measures to minimise dust emissions are incorporated into the Environmental Management Plan for the Project (Rail). In particular, the commitment to “Control measures to mitigate the emission of dust from loaded and unloaded coal trains will be put in place in accordance with the recommendations stated in the QR Network (2010) Coal Dust Management Plan”.	Long term compliance with this commitment is not subject to EHP regulation other than the nuisance provisions under the Environmental Protection Act 1997. A similar commitment should be included in the draft EMP for the mine. The proposed EA conditions also do not reflect the rail dust commitment.	Vol 3, Sections 7 and 13	Coal dust will be managed in line with a Coal Dust Management Plan developed for the Project. When operating on any Aurizon Operation Ltd (Aurizon) railway line, Adani will comply with the recommendations stated in the Aurizon (2010) Coal Dust Management Plan. Please refer to SEIS Volume 4 Appendix W for the revised EMP Rail. The Mine EMP includes commitments for managing dust impacts to sensitive receptors - this commitment is relevant to all sources and types of dust. In regards to coal dust, impacts relevant to mining have been presented in the revised air quality assessment (Volume 4 Appendix L) and Mine EMP (Volume 4 Appendix Q1).
40	DEHP	Noise and Vibration	Noise and vibration assessment	The World Health Organisation (WHO) published a report (2009) with new noise level recommendations taking account of long term associated health effects. As a result of this publication, the 1999 reference is obsolete and the latest publication should be the reference document.	Out of the two proposed thresholds associated for sleep disturbance, the threshold value of 45dBA Lmax should be dropped for the 30 dBA Leq. The indoor to outdoor level adopted by WHO is only valid for buildings reflecting the construction and climate in Europe and consequently the 15dB attenuation (outdoor to indoor) is not valid for Queensland. For Queensland, the indoor to outdoor attenuation is generally accepted as 5dB for low frequency and up to 10dB for mid audio range frequencies. The windows should be considered fully open and building type for attenuation should be the traditional Queenslander. The resulting outdoor criteria should be 35dBA for low frequencies and 40 dBA for mid audio frequency range. Any SEIS should include a revised noise study incorporating the above advice.	Volume 4, appendix U Section 1.3.6. – World Health Organisation Guidelines for Community Noise; Table 1-4 (Page 1-7)	Noted. The updated Noise and Vibration Assessment Report (SEIS Volume 4, Appendix N) has taken into consideration the WHO 2009 criteria. A discussion of how LAeq values translate to LAmax sleep disturbance is included in the SEIS.
40	DEHP	Noise and Vibration	Noise and vibration assessment	Only one noise measurement of 15 minutes was made at each location. This is not sufficient. Accepted practice for noise measurement to provide an acceptable level of validity is to do at least three noise measurements at each location of at least 15 minutes each. For comparison, DTMR request 4 measurements for a single site made on various days at various time periods. The 15 minute measurements however revealed anthropogenic noise such as air conditioning, water tower and more importantly, traffic noise. Also, noise levels at night are more likely to be a concern at sensitive receptors than day time noise.	Background noise levels at a number of representative sites should be confirmed using accepted monitoring practices. Attenuated noise measurements for night time should be made so that the content of the noise can be assessed. EHP officers should be consulted before commencement of further studies	Volume 4, appendix U Section 2.2, Table 2-5 (Page 2- 29)	Attended measurements were taken at unattended monitoring locations during the daytime to supplement logger data. The monitoring was conducted with consideration to land access timeframes, safety and security requirements. Unattended noise logging includes night-time data. The most stringent night-time criteria possible under the Eco-access Planning for Noise Control Guideline has been used in the assessment, which is based on the minimum night-time background noise level. Therefore, attended monitoring during night-time would not change the assessment outcomes.
40	DEHP	Noise and Vibration	Noise Impacts on Native Fauna and Livestock	The noise study does not fully or clearly address impacts on sensitive fauna species. Sensitive (e.g. endangered, threatened) fauna should be extracted from Volume 4 Appendix N1 and reported in a separate section that gives the potential area of the MLA that will likely noise impact relevant species and address the long term significance on habitat and species.	Include information that estimates the area for which it is expected significant noise exposure for sensitive (e.g. endangered and threatened) species is likely. EHP officers should be consulted before commencement of further study for any SEIS.	Volume 4, appendix U Section 3.4 – Noise Impacts on Native Fauna and Livestock (Page 3-13)	Mitigation measures for nuisance impacts are included to minimise impacts even when levels are within guideline values.
40	DEHP	Noise and Vibration	Noise and vibration assessment	The World Health Organisation (WHO) published a report (2009) with new noise level recommendations taking account of long term associated health effects. As a result of this publication, the 1999 reference is obsolete and the latest publication should be the reference document.	Out of the two proposed thresholds associated for sleep disturbance, the threshold value of 45dBA Lmax should be dropped for the 30 dBA Leq. The indoor to outdoor level adopted by WHO is only valid for buildings reflecting the construction and climate in Europe and consequently the 15dB attenuation (outdoor to indoor) is not valid for Queensland. For Queensland, the indoor to outdoor attenuation is generally accepted as 5dB for low frequency and up to 10dB for mid audio range frequencies. The windows should be considered fully open and building type for attenuation should be the traditional Queenslander. The resulting outdoor criteria should be 35dBA for low frequencies and 40 dBA for mid audio frequency range. Any SEIS should include a revised noise study incorporating the above advice.	Volume 4, appendix AF Noise (rail) Section 1.3.5 – Sleep Disturbance Rail Noise and Vibration	Noted. The updated Mine Noise and Vibration Assessment Report (SEIS Volume 4, Appendix N) has taken into consideration the WHO 2009 criteria. A discussion of how LAeq values translate to LAmax sleep disturbance is included in the SEIS. Noise and vibration modelling was not undertaken for the rail line due to limited change in the realignment thus limited change in the outcomes of this assessment.
40	DEHP	Noise and Vibration	Noise and vibration assessment	Only one noise measurement of 15 minutes was made at each location. This is not sufficient. Accepted practice for noise measurement to provide an acceptable level of validity is to do at least three noise measurements at each location of at least 15 minutes each. For comparison, DTMR request 4 measurements for a single site made on various days at various time periods. The 15 minute measurements however revealed anthropogenic noise such as air conditioning, water tower and more importantly, traffic noise. Also, noise levels at night are more likely to be a concern at sensitive receptors than day time noise. The background noise is more representative of the situation for sensitive noise receptors. The background noise levels measured should however be comparable to those expected for the report referred to in Section 2.2. (E)	Background noise levels at a number of representative sites should be confirmed using accepted monitoring practices. Attenuated noise measurements for night time should be made so that the content of the noise can be assessed. EHP officers should be consulted before commencement of further studies The differences in LA90 and LAeq figures for Mine Report A (shown below - refer table in orignial submission) demonstrate that the 15 minutes attenuated measurement is not representative. There is a need for the background noise measurements to be better investigated and reported.	Volume 4, appendix AF Noise (rail) Section 2.2 – Background Noise	Attended measurements were taken at unattended monitoring locations during the daytime to supplement logger data. The monitoring was conducted with consideration to land access timeframes, safety and security requirements. Unattended noise logging includes night-time data. The most stringent night-time criteria possible under the Eco-access Planning for Noise Control Guideline has been used in the assessment, which is based on the minimum night-time background noise level. Therefore, attended monitoring during night-time would not change the assessment outcomes. Noise and vibration modelling was not undertaken for the rail line due to limited change in the realignment thus limited change in the outcomes of this assessment. Adani will develop a noise monitoring plan to collect baseline data prior to start of construction.

40	DEHP	Nature Conservation	Habitat mapping	The mapping of potential habitat for Brigalow scaly-foot is not included within the mapping methodology and consideration of threatened species. This species is known from several records upstream of the project site and in habitat types located within the project area.	The Brigalow Scaly-foot should be included as a species that is likely to occur within the study area. The report should include an impact description with management options to be used. It is recommended this species should be incorporated in the methodology on known distribution, ecology and preferred habitat characteristics.	Volume 2, Section 5 – Nature Conservation 5.1.2.6	The likelihood of occurrence assessment for this species was based upon the published modelled distribution mapping that indicated that the species' range did not extend to the EPC 1080 and 1690 areas. DSEWPaC subsequently provided an additional record to the west of the project area that the EIS authors were unaware of at the time of writing and the opinion that the recent records may represent extensions to the previously considered range. Given this additional information, the species could be considered as 'likely to occur'. This will be discussed within the revised Ecological Assessment Report (SEIS Volume 4, Appendix J1). Note that the Brigalow scaly-foot has been delisted from the Commonwealth EPBC Act since the time of EIS publication and is now only listed at State level.
40	DEHP	Nature Conservation	Mitigation measures	Black-throated finch - the management and mitigation proposed do not include maintenance of the population within the subsidence area (underground mining areas) and in the areas subject to open cut mining in the later stages of the project. The report does not consider additional actions that could secure or improve the finch populations in offset areas.	The species specific management plan should include the continued management of habitat in the subsidence area (including the underground mining area and the later stages of open cut) such as the continued maintenance of artificial water points, weed management, management of disturbance, fire management, captive breeding and introduction of finches within offset areas.	Volume 2, Section 5 – Nature Conservation 5.4.2.3 Loss Habitat for Listed Fauna – Management and Mitigation	A detailed monitoring program was prepared for the Local monitoring (observation) on the Mine Area and the first survey was conducted in May 2013. It established 80 monitoring sites; 52 x 2 ha woodland sites, 8 x water body count sites and 20 camera trap sites. Detailed vegetation and habitat data was collected at the 2 ha sites. These include sites in the subsidence area. Survey methods follow those in EPBC Significant Impact Guidelines. Surveys were conducted over 8 days. A further 208 records of BTF were recorded mainly from 2-ha counts in 12 locations, including 3 records of nesting. The camera traps recorded a further 6 locations and mainly utilising troughs and ephemeral water. The results are presented in Carmichael Coal Mine and Rail SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Survey 1. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species Management Plan following the principles of adaptive monitoring and management. The monitoring data and the Black-throated Finch Species Management Plan will provide detailed information derived from local monitoring sites that will address water, weed, fire and disturbance management and develop management actions for mitigating impacts on the species. Adani commits to developing a detailed Black throated finch management plan which will present all monitoring, management and mitigation measures for minimising potential impacts on the Black throated finch. Refer to SEIS Volume 4, Appendix G Section 2.1.6.
40	DEHP	Draft Offset Strategy	Impact areas	Information has not been provided on impact areas for each biodiversity value (State and Commonwealth). Without this information any offset requirements proposed as a staged delivery cannot be assessed.	The proponent should present in table and map form the impact areas which require offsets for both Commonwealth and State offset requirements for each of the proposed three stages of the project. It is likely that the State values impacted by underground mining (such as subsidence) will require offsets.	Vol 4, App AH - Environmental Offset Strategy – 7.2 Delivery method	Offset values were provided in a table in the EIS and have been also provided as a table and mapped in the SEIS. An updated assessment of Offset requirements in presented in SEIS Volume 4 Appendix F. This includes consideration of areas potentially impacted by subsidence. Detailed offset mapping can be provide with the Offset Area Management Plans to follow the EIS and SEIS process.
40	DEHP	Draft Offset Strategy	proposed offset areas	The map of potential areas available for offsetting the impacts on State biodiversity values is considerably more in area than EHP data would indicate – e.g. data on regrowth with greater than 6% fpc (foliage protective cover).	The proponent should revise the estimated offset potential area within Moray Downs to more accurately reflect the likely availability of 6% fpc areas. Please contact EHP officers for further mapping information.	Vol 4, App AH - Environmental Offset Strategy – figure 5 – Moray Downs potential offset area; State	Final offset areas will be ecologically equivalent and subject to the offset assessment guide. An updated offset assessment has been carried out in accordance with the Galilee Basin Offset Strategy. Please refer to revised Offset Strategy Report in SEIS Volume 4 Appendix F.
40	DEHP	Draft Offset Strategy	proposed offset areas	Table 24 provides a summary of the area of offset potential on Moray Downs. Direct multipliers of the area are not useful in terms of quantifying the habitat condition of an ecosystem especially of how it relates to the habitat requirements of a threatened species. For example, not all of the nominated 37,839ha has acceptable ecological structure, acceptable pasture species (feeding requirements) and watering availability for e.g. black throated finch populations. It is noted that a mining lease application is pending for parts of the intended offsets area on Moray Downs.	The proponent should assess the ecological equivalence of the impact area and the proposed offset areas in order to determine the ratio of offset required and to determine the suitability of the habitat for the target species. This will also enable the proponent to determine the management actions required to ensure the survival of the species and ecosystems in this basin. It is recommended that the proponent provide maps of the availability of each offset value within Moray Downs in order to better assess the availability of offset values on this property.	Vol 4, App AH - Environmental Offset Strategy – Table 24	Ecological equivalence assessments have commenced for the Impact areas and will also be undertaken for Offset areas in accordance with both State and Federal Policy requirements. Please refer to revised Offset Strategy Report in SEIS Volume 4
40	DEHP	Nature conservation	Survey effort	There has been no comprehensive flora survey on EPC1080. This is a major omission. Also the six nominated fauna survey sites are an inadequate EIS survey effort for this area of impact.	These areas should be surveyed in accordance with EHP guidelines. Ecological equivalence surveys and the relevant flora surveys should be undertaken in the season March to early May to ensure existing species are likely to be sighted. Another fauna site is recommended in the middle of the northern section of the proposed disturbance area and one site in the southern section of the proposed disturbance area.	Volume 4 Appendix N1 Terrestrial ecology report	The survey work carried out at EPC1080 has been sufficient to determine the principal vegetation communities present within the area and the condition of these communities. Given the extensive survey effort on the neighbouring 1690 lease area, it has been possible to extrapolate these findings and apply them to the 1080 area, in order to gain a broad understanding of the flora known and likely to be present, sufficient for the purposes of the EIS.
40	DEHP	Nature conservation	Regional Ecosystems	The regional ecosystems modifications that the proponent has proposed are likely to be acceptable. Table 2-1 is however inaccurate or inconsistent with Table 2-2. From Table 2-2 four regional ecosystems were found to occur that Table 2-1 discounts (i.e. -11.3.5 (3ha), 11.4.8 (less than 1 ha), 10.5.2 (20ha) and 10.7.11 (4ha).	The inconsistency in regional ecosystem mapping is addressed a clear statement of the REs present on the project site should be provided.	Volume 4 – Appendix N1 Terrestrial ecology report – Table 2-1	A revised Ecological Assessment Report (SEIS Volume 4, Appendix J1) provides an overall assessment of the mine and offsite infrastructure impacts. This also addresses any inconsistency previously reported and accurately reflects the presence of REs within the project area, where appropriate to do so.
40	DEHP	Nature conservation	Potential habitat mapping	Table 3-3 states that potential habitat of Brigalow scaly-foot occurs in the region (project area) and It is acknowledged that it has been recorded in the region.	The EIS should be amended to state that the Brigalow scaly-food is likely to occur, given that there are multiple records within 25km west of the project area and, additionally, given that the habitat is in good condition. As such, this species should be assessed (as are all other listed threatened species) in the EIS including habitat extent, impacts and offset requirements.	Volume 4 Appendix N1 – Terrestrial Ecology Report- Table 3-3	The likelihood of occurrence assessment for this species was based upon the published modelled distribution mapping that indicated that the species' range did not extend to the EPC 1080 and 1690 areas. DSEWPaC subsequently provided an additional record to the west of the project area that the EIS authors were unaware of at the time of writing and the opinion that the recent records may represent extensions to the previously considered range. Given this additional information, the species could be considered as 'likely to occur'. This will be discussed within the revised Ecological Assessment Report (SEIS Volume 4, Appendix J1). Note that the brigalow scaly-foot has been delisted from the Commonwealth EPBC Act since the time of EIS publication and is now only listed at State level.
40	DEHP	Nature conservation	Rehabilitation	The grass species - Urochloa mosambicensis as listed and quoted from the Black-throated finch recovery plan does not occur naturally in the project area. It would be a significant ecological concern if the proponent introduced this or any other exotic pasture species into the project area or offset areas.	The information from the recovery plan should only be used where it is relevant to the project area. Much of the recovery plan has been developed to address the issues to the population of Black-throated finch that exists around Townsville and was finalised prior to the knowledge of the Desert Uplands populations. The EIS should be corrected and the EMP updated in describing the list of species to be used for rehabilitation.	Volume 4 – Appendix N1 – Terrestrial Ecology Report – 3.2.5.1	Though Urochloa mosambicensis is listed a species that Black-throated Finch has been observed feeding on (as with a few other introduced species), it will not be recommended for rehabilitation. In fact the Carmichael Coal Mine and Rail SEIS Black-throated Finch Monitoring Survey Report clearly indicates that the best areas for the species on the Mine Area are weed and exotic pasture free and should be maintained in their current condition, with minimal or grazing exclusion (refer to SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Report). DEHP comments are noted in regards to the species composition for rehabilitation, particularly for grass species. Adani will work with DEHP to finalise the Rehabilitation Strategy to allow detailed inclusion of these requirements in the approved Environmental Authority.

40	DEHP	Nature conservation	Pest species	This section should have considered the spread of exotic pasture species such as Cenchrus ciliaris which would compromise the habitat quality for several flora and fauna species as is of particular concern in terms of likely impacts on the feeding requirements for the Black-throated finch.	It is recommended that supplementary information to the EIS for this project address the potential impact, management and mitigation of the invasion of buffel grass and other exotic pasture species in particular its likely impact on the habitat of threatened species	Volume 4 – Appendix N1 – Terrestrial Ecology Report – 5.4 Introduction and proliferation of weeds and feral species	The additional Black-throated Finch Monitoring Survey undertaken for the SEIS clearly indicates that the best areas for the species on the Mine Area are weed and exotic pasture free and should be maintained in their current condition, with minimal or grazing exclusion (refer to SEIS Volume 4, Appendix J2 Black-throated Finch Monitoring Report) . The spread of exotic pastures would compromise habitat for this species and will not be a recommendation for rehabilitation or pasture management in the remnant vegetation, and it will be recommended that grazing is limited or excluded.
40	DEHP	EMP - Mine	Rehabilitation	The rehabilitation key outcomes stipulate completion criteria of 70% cover of grasses and trialling the establishment of native grasses, shrubs and trees to achieve targeted environmental values. However, these completion criteria do not ensure that the current high value habitat and ecological integrity of adjacent areas to the west of the project site will not be affected by species to be used in rehabilitation.	The rehabilitation areas should only use native pasture, and shrub and trees species endemic to the area. Rehabilitated lands will support the important remaining habitat (such as for the threatened black-throated finch). The EMP and rehabilitation plan should address this issue.	Volume 2 Section 13 EMP Mine – 13.34.4 Rehabilitation	Please refer to SEIS Appendix 4 - Appendix R1 and R2 for the Closure and Rehabilitation Strategies for the Mine and Offsite area, respectively for additional information. Final treatments proposed are sought to be consistent with existing environmental and agricultural values. DEHP comments are noted in regards to the species composition for rehabilitation, particularly for grass species. Adani will work with DEHP to finalise the Rehabilitation Strategy to allow detailed inclusion of these requirements in the approved Environmental Authority.
40	DEHP	EMP - Mine	Subsidence management	There is no modelling provided as to the effects of subsidence or the management of the land where subsidence may occur. This lack of a subsidence plan makes it difficult to assess the long wall mining impacts. It is not clear that amelioration is planned.	It is recommended that a subsidence management plan is presented in any SEIS. This area has significant conservation values which should be managed in the subsidence footprint area to nominated conservation outcomes.	Volume 2 Section 13 EMP Mine	Subsidence modelling has been provided in Volume 4 Appendix I1 of the SEIS. Environmental impacts of subsidence are presented in Volume 4 Appendix J1 of the SEIS. Management and mitigation of subsidence is provide in Volume 4 Appendix Q1 of the SEIS. Adani has also developed a Draft Subsidence Management Plan, SEIS Volume 4, Appendix I2, which assesses impacts on SSBV and MNES and proposes mitigation and management measures to minimise potential impacts.
40	DEHP	Nature Conservation	Survey effort	Table 2-2 Regional ecosystem descriptions – 11.5.3 was not surveyed. There are proposed large impacts (such as borrow pits) in this ecosystem and this RE type has high ecological and habitat values.	The proponent should carry out flora and fauna surveys in this ecosystem (especially near Moranbah). Likely impacts (direct and indirect) should be described and where impacts cannot be avoided, appropriate offsets should be proposed.	Volume 4 Appendix AA - Rail Ecology Report	This least concern RE (11.5.3) is one of the most common in the Brigalow Belt north and the flora and fauna assemblage is well known. There are vast tracts of this RE in the region and it has been well-studied.
40	DEHP	EMP - Mine	Rehabilitation	The information provided on rehabilitation is inadequate to determine whether the proposed rehabilitation is adequate and can be suitably conditioned. No comprehensive Rehabilitation plan is provided.	A rehabilitation plan should be provided which stipulates the area to be rehabilitated within each stage. This plan should also stipulate landform, soil management and which endemic species are to be planted. It is recommended that the proponent plan include rehabilitation of at least two wildlife corridors across the open cut mining impact area in order to address the loss of east-west connectivity between the Desert Uplands and Brigalow Belt bioregions.	Volume 2 Section -13 EMP Mine – 13.34.4 Rehabilitation	Please refer to SEIS Appendix 4 - Appendix R1 for the Closure and Rehabilitation Strategies for the Mine. Connectivity will be provided along the Carmichael River Corridor and through rehabilitation of surface water diversion corridors. Adani will work with DEHP to finalise the Rehabilitation acceptance criteria for the project, including the establishment of appropriate reference sites that are outside the direct and indirect impact from Mining Operations.
40	DEHP	Nature Conservation	Survey effort	The EIS conclusion that there is no significant population of koalas on the impacted site is not substantiated. Surveys undertaken by the proponent for koalas were inadequate. In section 1.5.5.11 of Volume 4 Appendix N1 Mine Terrestrial Ecology Report, the proponent indicates that targeted surveys for this species were not undertaken. Reliance on surveys undertaken in relation to other species, in particular nocturnal ground dwelling species, does not meet State and Commonwealth survey standards for koalas. The EIS states that koala habitat on the development site is not likely to be critical habitat. The Commonwealth government has not developed formal koala guidelines and have indicated that any habitat supporting koala food trees (whether primary or secondary food tree species) and shelter trees, especially where the habitat is within or adjacent to waterways is likely to be viewed as critical habitat for koalas in the Brigalow Belt and Desert Uplands Bioregion.	It is recommended that targeted surveys be carried out for koalas. It is suggested that expert advice (e.g. Dr Alistair Melzer University of Central Queensland) be obtained for guidance on suitable survey methodology in this area. The results of surveys should be provided for assessment prior to completion of the EIS process.	Volume 2 – Section 5 Nature Conservation 5.2.4.3 (Koalas page 5-74 and 5-75) Volume 4 Appendix N1 Mine Terrestrial Ecology Report, section 1.5.5.11	Whilst no targeted koala surveys have been carried out, substantial amounts of active searching have been undertaken for fauna species within habitat types that may be occupied by koalas. Koalas have been located and the EIS has taken a conservative approach to the definition of potential habitat for koalas and has assessed against this. Where impacts have been deemed to be unavoidable, potential koala habitat has been offset following appropriate policies and guidelines. The definition of 'habitat critical to the survival of' koalas was taken from the Commonwealth's 'Interim Koala Referral Advice for Proponents' (June 2012) and its application to the EIS is appropriate pending the publication of further finalised guidance.
40	DEHP	Draft Offset Strategy	proposed offset areas	Tables suggest that presence of values on the impacted sites have been confirmed however this is not the case – surveys were not undertaken in relation to the offsite infrastructure area (referred to in the Strategy as 'offsite clearing area'). It is understood that an application for a mining lease was recently received in relation to most of the Moray Downs property. Offset proposals on this site are therefore unlikely to achieve conservation benefits. The Strategy states that Adani seeks approval from the Department of Environment and Heritage Protection to locate offsets in either the Desert Upland or Brigalow Belt Bioregion as long as the offset is located within areas containing suitable habitat requirements or environmental values.	The offset strategy should be in accordance with the existing Queensland Biodiversity Offset Policy (EHP 2011) and Galilee Basin Offset Strategy (EHP 2012). An offset proposal would not be accepted where the site is located within a mining lease area or mining lease application area. If the offset is in the Galilee Investment Hub shown in the Galilee Basin Offset Strategy, an offset may be supported with the provision of supporting information such as demonstration that there is a nexus between the values impacted and the proposed offset and that a conservation gain can be achieved.	Draft Offset Strategy, Section 3, Section 6.1, Section 6.2.1	Offset areas have been identified in accordance with the Australian and Queensland Government offset legislation focusing on priority GBOS properties. Further work was also carried out in the offsite infrastructure locations. Please refer to revised Offset Strategy Report in SEIS Volume 4 Appendix F.
40	DEHP	Draft Offset Strategy	proposed offset areas	(as above)	If the offset is not in the Galilee Investment Hub, it may be supported provided that the Queensland Biodiversity Offset Policy (BOP) requirements are met. This includes: - a demonstrated clear conservation gain; - ecological equivalence requirements met; - remnant regional ecosystems - the offset must be in the same bioregion, same broad vegetation group, not remnant, and with the same conservation status or higher; and - protected plants and animals – the specific policy requirements under the QBOP are met (e.g. page 31 and 33 of BOP).	Draft Offset Strategy, Section 3, Section 6.1, Section 6.2.1	Offset areas have been identified in accordance with the Australian and Queensland Government offset legislation focusing on priority GBOS properties. Further work was also carried out in the offsite infrastructure locations. Please refer to revised Offset Strategy Report in SEIS Volume 4 Appendix F.
40	DEHP	Nature conservation	Wetlands	The EIS states 'Ground truthing of the vegetation communities in the three WPA areas did not confirm the presence of RE 11.3.27 and in some cases no remnant vegetation was detected.' The ground truthing adequately demonstrates that 11.3.27 is not present however it does not provide evidence to suggest that wetlands aren't present, and wetlands are not always associated with remnant vegetation.	Any SEIS should address the wetlands survey requirements. To determine the absence of wetlands at one or all of the identified sites the Queensland Wetland Definition and Delineation Guideline Parts A and B should be used.	Appendix O1 3.3.2 Great Barrier Reef Wetlands, page 3-6	GBR WPAs were surveyed in May 2013 using the Queensland Wetland Definition and Delineation Guidelines, results are presented in the GBR WPA report (SEIS Volume 4 Appendix J9 GBR Wetland Protection Areas Report).

40	DEHP	Nature conservation	Wetlands	The Aquatic Conservation Assessment identified the Wetland Protection Areas as scoring High because of Criteria 3 – Diversity and Richness equal to Very High and Criteria 8 Representativeness which equals Very High. As a landscape assessment these criteria cannot be challenged however on-ground aquatic values can be provided. The information provided in the EIS does not demonstrate adequately that aquatic values (except the mapped RE 11.3.27) are not present.	The proposed offset area on the balance of the Moray Downs property contains many wetlands that are scored as very low and medium by the Aquatic Conservation Assessment. These wetlands may be rehabilitated as part of the project offset proposal. Further surveys on the wetlands in the impact area would also be required. In any case further surveys when the wetland is wet are required to determine the values of the Wetland Protection Areas. This information is essential so that adequate measures to+G50 avoid, mitigate and offset can be developed. This information should be provided before completion of the EIS assessment.	Appendix O1 3.3.2 Great Barrier Reef Wetlands, page 3-6	GBR WPAs were surveyed in May 2013 using the Queensland Wetland Definition and Delineation Guidelines, results are presented in the GBR WPA report (SEIS Volume 4 Appendix J9 GBR Wetland Protection Areas Report).
40	DEHP	Nature Conservation	Wetlands	The conclusions reached for the 3 wetland protection areas (WPAs) are not based on adequate information, in particular the following statements: 'The WPAs are mapped north of the Carmichael River up to two kilometres from the waterway. Ground truthing at these locations did not detect any standing water at the time of survey.' Lack of standing water at one point in time is not evidence for an absence of aquatic environmental values. Surveying effort at the two sites is not sufficient to draw the conclusion that the WPAs 'aquatic ecology values are considered to be low for aquatic flora and fauna.' Wetlands in this region can be dry for months or years but still support aquatic communities when wet. and	The proposed offset area on the balance of the Moray Downs property not affected by mining contains many wetlands that are scored as very low and medium by the Aquatic Conservation Assessment. These wetlands may be rehabilitated as part of the project offset proposal and if so further surveys on the wetlands in the impact area would be required. In any case further surveying when the wetlands are wet is required using an appropriate methodology to demonstrate either that there is no wetland present or define the values of the wetland. The definition of wetland should be referenced to identify if mapped wetlands - ground truthing may suggest that the mapping is incorrect.	Appendix O1 3.3.2 Great Barrier Reef Wetlands, page 3-6	GBR WPAs were surveyed in May 2013 using the Queensland Wetland Definition and Delineation Guidelines, results are presented in the GBR WPA report (SEIS Volume 4 Appendix J9 GBR Wetland Protection Areas Report)
40	DEHP	Nature Conservation	Wetlands	'The western most mapped WPA displayed little evidence of water retention. The area instead appeared to be a depression in the landscape where, during wetter periods, the substrate retained moisture.' The statement indicates that the conditions for wetland habitat are present at this site, there is not enough survey effort provided to demonstrate that the aquatic environmental values are low. The WPAs have not been included in figure 1-4 Aquatic Ecology Habitat Assessment Sites (except site 19). The photos (plates 3-1 to 3-3) suggest that the sites were dry at the time and the conclusions were drawn from one inspection that was cursory.	The definition of wetlands used by the Queensland Government should be noted. *Wetlands are:* *Areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt. To be a wetland the area must have one or more of the following attributes:* *i) at least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or* *ii) the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or* *iii) the substratum is not soil and is saturated with water, or covered by water at some time.* Given the time scales involved with this project the surveys should be conducted when the wetlands are wet and completed before decisions requiring the information are made e.g. adequate offset procurement and any operational works that will remove or reduce the values.	Appendix O1 3.3.2 Great Barrier Reef Wetlands, page 3-6	GBR WPAs were surveyed in May 2013 using the Queensland Wetland Definition and Delineation Guidelines, results are presented in the GBR WPA report (SEIS Volume 4 Appendix J9 GBR Wetland Protection Areas Report).
40	DEHP	Nature Conservation	Wetlands	It is not clear what is the difference between 'significant wetlands' and wetland protection areas. According to the EIS Wetland Protection Areas are identified as containing areas of high ecological significance yet Page 32 states that 'No significant wetlands are expected to be impacted.'	The Moray Downs property outside of the mine lease contains 36 wetlands that may be suitable as offsets for the 3 WPAs identified within the impact area. If all of these wetlands were to be rehabilitated it is likely that this would be an adequate offset for the impacts within the mine lease area. Further survey effort is required on the wetlands within the mine lease however survey effort may also be better focused on the wetlands to be rehabilitated to ensure that data is available for the Rehabilitation Management Plan. To better focus survey effort EHP officers are available to be consulted on any further survey work to be proposed before carrying it out.	Environmental Offset Strategy 2.4.4 Wetlands and wetland protection area	Information from the GBR WPAs survey in May 2013 using the Queensland Wetland Definition and Delineation Guidelines, presented in the GBR WPA report (SEIS Volume 4 Appendix J8) will be used to determine an appropriate offset strategy for the GBR WPAs.
40	DEHP	Nature Conservation	Rehabilitation	While the EIS states that a Rehabilitation Management Plan for the Project will incorporate measures to enhance aquatic habitats that may be created throughout the mining operation, where suitable, it is not clear what data this plan will be based on.	Accurate data on the values of the aquatic habitats is essential to making a Rehabilitation Management Plan that will have the required environmental outcomes. This can be gained by completing further surveys as indicated in the EIS. Any SEIS should address this issue. Although the wetlands are mapped as containing RE 11.3.27 further surveys can provide a more accurate identification of the values which can be used as guides for rehabilitation of the offset wetlands and the created wetlands within the mine lease.	5.5.1.2 Management and mitigation Page 5-15	Information from the GBR WPAs survey in May 2013 using the Queensland Wetland Definition and Delineation Guidelines, presented in the GBR WPA report (SEIS Volume 4 Appendix J8) will be used to determine an appropriate offset strategy for the GBR WPAs.
40	DEHP	Water resources	Groundwater	The EIS states : 'Calibration in transient mode would have been preferable but it is currently considered that there is insufficient time series groundwater level data to make this worthwhile. Data loggers have however been installed at all of the monitoring network bores onsite in order to fill this data gap as soon as possible.	This data should be provided as a report for any Supplementary EIS. This information should be used to support or update the findings in the EIS.	Vol 4, Appendix R Mine Hydrology report, 5.5 Model Calibration Page 5-12	As discussed in Section 5.5.1 of the SEIS Volume 4, Appendix K1, Updated Mine Hydrogeology Report in this case a transient calibration was considered likely to be of limited value since: - Only a relatively short groundwater level record is available; and - Few of the monitoring bores completed into the deeper Permian Strata show any significant rainfall related fluctuations in groundwater levels. This is consistent with the confined nature of these strata and the generally very low rainfall recharge rates expected in the area. Given that the proposed development is for extraction of coal from the Permian strata then it is the storage parameters of these strata that will govern the initial rate of the development of groundwater level impacts. Rather than complete a transient calibration of limited use the sensitivity of model predictions to a range of different of likely storage values has instead been assessed. As the length of the monitored period increases then a transient calibration may become worthwhile, particularly where significant recharge events occur and/or the aquifers are stressed in other ways (e.g. by long term pumping tests or development of a starter pit or box-cut).

40	DEHP	Water resources	Groundwater	The EIS states that: '*Based on recent assessments of the potential for impacts on GAB springs in response to Coal Seam gas extractions carried out by DNRM and the Queensland Water Commission, drawdowns of over 0.2m at GAB spring locations are considered to be potentially significant. Predicted drawdowns at all of the mapped Doongmabulla Springs are below this threshold and are therefore considered to be insignificant* .' Given the lack of precision in prediction of drawn down that may occur due to the project, monitoring program should be implemented to detect if there is any impact on the springs due to the project.	The Doongmabulla Springs are a Wetland of International Importance and require detailed assessment to determine their hydraulic requirements and more detailed modelling (from bore logs) that will enable a more accurate assessment of impacts. The EMP should also include a monitoring program (as indicated in the EIS) at the Doongmabulla Springs and Mellaluka springs to provide for an adaptive management approach to respond to trends outside the predictions.	7.2.5 Potential impact on Local Spring Systems page 7-4	Additional ecological and hydrogeological work has now been undertaken at both the Mellaluka and Doongmabulla spring complex sites as detailed in the SEIS Volume 4, Appendix J3, Springs Ecological Assessment Report and Appendix K1, Updated Mine Hydrogeology Report. Adani is committed to undertaking ongoing monitoring at these sites and a number of locations in between these springs and the Mine Area in order to confirm baseline conditions and hence identify suitable trigger levels. Once suitable trigger levels have been identified and agreed with relevant agencies then these triggers will be used to manage potential impacts.
40	DEHP	Water resources	Groundwater	EIS states that: 'Given the importance of these springs from an ecological and cultural perspective, further investigations and monitoring will be undertaken prior to commencement of mining operations, to establish a reliable baseline data set of conditions at the springs and also of groundwater levels between the springs and the Project (Mine) site. The following investigations and monitoring are proposed at least 12 months prior to commencement of any dewatering operations: -An ecological survey of the spring complex to establish its 'health' and to establish any seasonal variations. The survey would include measurement or estimation of discharge flows, assessment of the water quality and assessment of the ecology (for example extent, health and species present). -A 12 month period is likely to be insufficient to carry out the field work and other tasks necessary to formulate the necessary management requirements to limit impacts on the springs.	Further investigations with a detailed hydrological assessment should be undertaken to determine: 1. underground causes of discharge spring as per 'Conceptual Model Cast Study Series Eulo springs supergroup' available from www.ehp.qld.gov.au/wetlandinfo 2. Preparation of scenarios for possible impacts on the Doongmabulla and Mellaluka springs from a range of drawdown depths. This should allow for a buffer zone and trigger points to be estimated that provide a measure for determining avoidance and mitigation procedures. The national wetlands guidelines state that drawdown of up to 0.2m may be acceptable. The significance of the Doongmabulla springs requires a more detailed approach where a more precise understanding of the tolerance to these changes is established.	Appendix R Mine Hydrology Report 7.8 Management, Mitigation and Monitoring Activities – Operational Phase 7.8.4 Local spring Systems page 7-9	1. Please refer Section 2.3.2 of SEIS, Volume 4 Appendix K1, Updated Mine Hydrogeology Report: Details standpipe piezometers recently installed between the Mine area and the Doongmabulla springs, and the Mine Area and the Mellaluka springs for baseline groundwater levels and quality monitoring. These locations will also be suitable for monitoring against trigger levels (yet to be determined) during operational activities. Please refer Section 4.9.1 and 4.9.2 of SEIS Volume 4 Appendix K1, Updated Mine Hydrogeology Report: Details current hydrogeological understanding in with respect to Doongmabulla and Mellaluka springs. Section 7.6.4, Section 7.6.5 of SEIS Hydrogeology Report: Details continuation of monitoring to establish baseline conditions at the springs and the nearby groundwater monitoring bores. 2. Acknowledged. Adani is committed to undertaking ongoing monitoring at the spring sites, and at a number of other locations in between these springs and the Mine Area, in order to confirm baseline conditions and hence identify suitable trigger levels. Once suitable trigger levels have been identified and agreed with relevant agencies then these triggers will be used to manage impacts to within acceptable levels.
40	DEHP	Water resources	Surface water	Surface water and aquatic ecosystem health The EIS lacks detailed information on discharge proposals and the environmental risks of this proposal. Insufficient information has been provided to allow EHP to draft recommendations for conditions that would need to be met for any discharges from the project site. The proposed discharge conditions presented in the EM Plan (Table 13-45) are considered high risk and have been presented without adequate justification or supporting information. The EIS lacks much of the necessary relevant spatial and scientific information to assess a proposal to mine water discharges.	Information is required on the likely water discharge regime for this proposal. Further information and justification for deriving site specific Water Quality Objectives (WQOs), discharge limits/triggers, and EC/flow relationships is required. The EMP requires a clear proposal on location of ongoing monitoring within the receiving environment. Additional baseline water quality monitoring data is required to reliably derive local WQOs. The methodology for this process requires clarification, as there appears to be confusion regarding the types of data which can be included in the statistical analysis. All monitoring data is required in an appropriate format in reporting. Baseline monitoring data should be presented in raw electronic format to assist assessment procedures. Characterisation or predictions of the quality of mine-affected water have not been presented. This is required to assist in developing the water management system and any discharge criteria.	Vol 2, Section 6	Additional baseline water quality monitoring data was collected and revised water quality objectives were created. See updates in the Mine Water Quality Report (SEIS Volume 4, Appendix K3).
40	DEHP	Cumulative impacts	Water quality	Cumulative impacts for water quality parameters are not addressed quantitatively. The EIS dismisses the requirement for detailed assessment of cumulative impacts from multiple coal mines discharges to waterways in the Galilee based on the geographical distance between mine sites. There will be at least two approved mining proposals (Alpha and Kevin's Corner) in the vicinity with water quality criteria that may be relevant for consideration by the Carmichael proposal.	Cumulative impacts are a consideration in developing any environmental authority. The waterways in question are connected (e.g. Belyando Suttor sub catchment) and there is a risk that regional impacts on downstream drinking water supply or impoundments may occur (several coal mines at various stages of planning in close quarters. The numerical calculations and assimilative capacity relating to electrical conductivity (EC) for the Galilee may be affected by other mine proposals. It is recommended that the proponent undertakes a Cumulative Surface Water Impact Assessment when information and discharge proposal details are finalised.		Comments noted. Impacts on water resources are discussed in the updated (refer to SEIS Volume 4 Appendix K3 Water Quality Report and K5 Revised Mine Hydrology Impact Assessment Report). Further information on impacts to surface water is presented in the revised MNES Report (Refer to SEIS Volume 4, Appendix H).
40	DEHP	Water resources	Water supply	The EIS (page 79) lists "Suitability for minimal treatment before supply as drinking water" as a relevant environmental value (EV). Two pages later in Table 6-18 this particular EV is omitted. Justification is presented on page 49 of Volume 4 Appendix Q Mine Water Quality Report for the removal of this EV. Justification provided is "Farm dams used for stock watering only". However, there is anecdotal evidence that in certain regional locations, some farmers pipe water directly from streams and rivers to use as drinking water perhaps with minimal treatment. While this may not be the case downstream of the proposed Carmichael Project, the proponents should investigate this possibility and present results of this enquiry.	The EIS (SEIS) should investigate and report on whether downstream landholders and farmers use any piped water from streams and rivers for drinking water uses. On a regional scale, 'suitability for drinking water supply' should be added as a relevant EV. This information should be provided in the updated Water Resources Section of the EIS, and EM Plan. The environmental values of waters that may be affected by discharge and runoff from the project needs to be established before any approved discharge quality criteria can be set.	Volume 2, Section 6.2.4, page 79 of 126 Vol 4, App Q, page 49	Drinking water has been added as an environmental value when calculating new water quality discharge objectives for Carmichael River. These objectives have been considered in creating the site discharge objectives.
40	DEHP	Water resources	Water quality	In addition to listing the relevant EV's for the Carmichael Project, it is important to provide an indication of the location of relevant EV's (local or regional scale). This process involves placing symbols for each value on a map to ensure all potential uses and users that might be impacted by a potential change in water quality or quantity are identified. The presentation of spatial information is a key component of identifying the risks posed to these values.	The EIS (SEIS) should provide a map describing the specific locations of environmental values of waters downstream (on a local and regional scale).	Table 6-18 of Volume 2 Section 06 Water Resources	EV's are identified and discussed in SEIS Appendix K3 Water Quality Report.

40	DEHP	Water resources	Water quality	Surface water quality monitoring data is unsuitable to be used in establishing local Water Quality Objectives (WQO's) for local receiving waters. Various sections of the EIS state an intention to establish local WQOs. However, little information is presented as to how it is intended to complete this process. Surface water quality monitoring undertaken to date for the Carmichael Project is limited in duration, and largely unsuitable for use in deriving local WQOs. A number of included water quality monitoring sites are listed as dams (e.g. Site 6, 7, 8, 9). Monitoring data collected from dams should not be included in the statistical WQO derivation process for flowing waterways (even if waterways of interest are ephemeral).	Monitoring data is required for water quality and flow in local waterways. Monitoring data collected from streams under no flow or very low flow should be excluded from consideration in developing WQOs. A measure or estimate of flow should be included in the reporting for each site during all sampling occasions. In-stream water quality and quantity monitoring should continue on an ongoing basis, and should target various flow scenarios. In particular wet season flows would be required. This monitoring data should support the development of the EM Plan, Mine Water Quality Reports, and the environmental authority.	Volume 4 Appendix Q	Additional baseline water quality monitoring data was collected and revised water quality objectives were created. See updates in the Mine Water Quality Report (SEIS Volume 4, Appendix K3).
40	DEHP	Water resources	Water quality	Water quality often declines with time in stagnated, pooled waters for certain indicators (e.g. due to evapo-concentration etc.). In addition, when water is ponded it is likely that stratification will occur, with higher salinity water falling to the lower sections of water column (sampling can significantly change results). It is therefore not advisable to include monitoring data collected during periods of no flow/very low flow in ephemeral waterways (for WQO derivation). WQOs should be derived using monitoring data collected during periods of flow. Table 4-2 in the Mine Water Quality Report (MWQR) "Rainfall Recorded Prior to and During Monitoring", page 56 of 211) suggests that much of monitoring was undertaken during the dry season. Also on pages 23 to 27 of the MWQR, the monitoring conditions noted during sampling events are listed as either low flow or no flow for all creek monitoring sites.	Any SEIS should include an update on water monitoring results collected since the compilation and release of the EIS as well as how and when the WQOs will be developed. See following comment for further guidance on the ongoing Carmichael surface water monitoring program.	Volume 4 Appendix Q	Additional baseline water quality monitoring data was collected and revised water quality objectives were created. See updates in the Mine Water Quality Report (SEIS Volume 4, Appendix K3).
40	DEHP	Water resources	Water quality	The MWQR (page 51) states that there is an intention to follow the Queensland Water Quality Guidelines (QWQG, 2009) in the process of deriving water quality objectives (WQOs). There is little information on how the WQOs will be developed.	The following advice should be considered in deriving local WQOs: 1) Monitoring data should be collected from sites that are in reference condition (see Section 4.4.2 of QWQG, 2009). 2) A measure or estimate of flow for all monitoring data needs to be recorded in reporting to the administering authority. 3) A minimum of 18 appropriate data points from true reference sites representative of the creek system and collected over at least 12 months (24 months preferable) (See Section 4.4.3 of QWQG, 2009) 4) Remove any data from the WQO process if it was collected from lakes, dams, or under no flow or very low flow scenarios. 5) Provide latitude and longitude information in reporting to the administering authority. This advice should be incorporated in monitoring programs and reporting, in particular for the derivation of local WQOs. This information is required to assist development of the EM Plan, Mine Water Quality Reports, and any draft environmental authority.	Volume 4 Appendix Q Mine Water Quality Report (MWQR) Minimum requirements for establishing local WQOs according to the Queensland Water Quality Guidelines (QWQG, 2009)	Additional baseline water quality monitoring data was collected and revised water quality objectives were created. See updates in the Mine Water Quality Report (SEIS Volume 4, Appendix K3).
40	DEHP	Water resources	Water quality	A number of the requirements listed in the ToR have not been adequately addressed in the EIS or EM Plan. For any proposal to discharge, the following two ToR requirements should be addressed: "*Address and describe the following matters, including provision of maps:* *- Chemical and physical properties of any wastewater including stormwater at the point of discharge into natural surface waters, including the toxicity of effluent to flora and fauna* *- Potential impacts on other downstream receiving environments, considering the available assimilative capacity of the receiving waters, if it is proposed to discharge water to a riverine system"* No clear information could be located in the EIS which adequately characterised the quality of Mine Affected Water (MAW). Table 6-1 of the MWQR presents a list of certain contaminants of concern but quantitative estimations are not presented. Insufficient consideration has been given to the assimilative capacity of receiving waters, in particular for indicators such as salinity and sulphate.	Quantitative information is required on the anticipated quality of mine affected water (MAW). The assimilative capacity of receiving waters should also be addressed for deriving conditions for the proposed environmental authority (EA) for example for revising Table 13-45 (Indicative Mine Affected Water release during flow events). The current conditions listed in the EA Table 13-45 (page 98 of EM Plan) are high risk, and are not justified scientifically based on the EIS information provided. Variation in electrical conductivity (EC) concentrations with flow (hydrograph) within receiving waters should be characterised. This information is required to justify flow triggers in setting EA. This data should support the development of the EM Plan, Mine Water Quality Reports, and the environmental authority. Reports should be provided as part of the assessment process that include the requested water quality information.	Volume 2 Section 13 Draft Environmental Management Plan Volume 4 Appendix Q Mine Water Quality Report (MWQR)	All information available at this point in time has been collated and processed in SEIS Appendix K3 Water Quality Report. Points of discharge are as part of the water management strategy described in SEIS Appendix K2 Water Balance Report identified and number of locations have been kept minimal. While complete understanding of all potential contaminants is currently not available, water quality objectives have been developed that need to be met for any releases from the site.
40	DEHP	EMP - Mine	Water quality	The EM Plan proposes EA conditions (Table 13-45 of the EM Plan (page 98)) that represent a high risk to local environmental values. The use of the downstream monitoring of EC and sulphate at the Gregory Development Road (at least 70km downstream) as compliance monitoring of discharges presents a high risk to environmental values within receiving waterways near-field. The supporting information in justification of the discharge conditions listed in Table 13-45 of the Draft EM Plan (Mine Hydrology Report and Preliminary Water Balance Model) however is not scientifically robust or suitably justified.	(as above)	Volume 2 Section 13 Draft Environmental Management Plan Volume 4 Appendix Q Mine Water Quality Report (MWQR)	The revised EMP presents proposed discharge and receiving water conditions. Refer to Volume 4 Appendix Q1 for the Mine EMP, Appendix K3 for the Water Quality Report and Appendix C6 for proposed Environmental Authority conditions.
40	DEHP	EMP - Mine	Water quality	The EM Plan lacks details of the proposal to discharge. No information on the proposal to discharge to a particular waterway is provided. It would appear that both the Carmichael and Belyando Rivers are being considered as recipients of discharge. However, all of the surface water monitoring presented in the EIS has been undertaken in the Carmichael River (or smaller streams). It is necessary to collect or collate background water quality and quantity monitoring data from the Belyando River if this is a potential location for wastewater discharges from the Carmichael Coal Mine. No on-going receiving environment monitoring program (REMP) monitoring points are listed and no spatial co-ordinates are provided for on-site water management infrastructure or, for example, discharge points. Without this information it is not possible to assess the likelihood for environmental harm associated with the proposal to discharge.	Finalised detailed information regarding discharge proposals should be provided and supporting documents such as the EM Plan should be updated. The proposed EA conditions (such as Table 13-45) cannot be properly established and finalised without this information, and without further detailed assessment.	Volume 2 Section 13 Draft Environmental Management Plan Volume 4 Appendix Q Mine Water Quality Report (MWQR) Missing details in relation to the proposal to discharge	The revised EMP presents proposed discharge and receiving water conditions. Refer to Volume 4 Appendix Q1 for the Mine EMP, Appendix K3 for the Water Quality Report and Appendix C6 for proposed Environmental Authority conditions.

40	DEHP	Description of the Project	Mine Water Management	The EIS proposes exclusion of mining activities in the Carmichael River floodplain (corridor width of 500m from the Carmichael River). It is unclear how effective this buffer will be in achieving flood protection and maintaining biodiversity values	Clarification is needed on the hydrological impacts to the Carmichael River and associated waterways resulting from flood protection levees and the 500m buffer corridors that may also affect downstream biodiversity (aquatic and terrestrial).	Volume 2 section 2	The 500 m wide buffer on each bank of the Carmichael River will assist in protecting the riparian ecosystem from direct impacts of mining operations. Flood impacts on downstream biodiversity are discussed further in SEIS Volume 4 Appendix J1 Revised Ecological Assessment Report.
40	DEHP	EMP - Mine	General comment	The Environmental Management Plan (EM Plan) does not provide enough information about the following activities proposed at the mine site: - Environmentally Relevant Activities (ERA) under schedule 2 and 6 of the Environmental Protection Regulation 2008 and; - Notifiable activities under schedule 3 of the Environmental Protection Act 1994.	The EM Plan should: - Identify the threshold of each ERA under schedule 2 and 6 of the Environmental Protection Regulation 2008; - Identify and describe all the environmental values and potential environmental impacts that will be caused by each ERA proposed to be undertaken as part of the Carmichael Coal Mine and define the critical environmental values. For each of the environmental values to be protected, commitments must be proposed and identify the environmental protection objective(s), standard(s), measurable indicator(s) and control strategy(ies) to demonstrate how the objective(s) will be achieved; and - A list of the notifiable activities under schedule 3 of the Environmental Protection Act 1994. Please refer to the EHP Information Sheet 'Information to be provided with an application for a development approval for an environmentally relevant activity' for guidance relating to the type of information required for ERAs. It is further recommended that the proponent meet with EHP officers to discuss the requirements of each ERA.	EM Plan Volume 2 Section 13 Environmental Management Plan (Mine) General comment	Further detail on Environmentally Relevant Activities has been provided in SEIS Volume 4 Appendix C1 Approvals Report and subsequent applications included in appendices C3-C5. Adani will work with DEHP in order to finalise ERA requirements prior to Project Approval and construction.
40	DEHP	EMP - Mine	General comment	There are inconsistencies between the EM Plan and the EIS documentation.	Recommendations made within the EIS reports should be consistent with the information provided in the EM Plan.	Volume 2 Section 13 Environmental Management Plan (Mine)	The Mine EMP has been revised and inconsistencies addressed. Please refer to SEIS Volume 4, Appendix Q1.
40	DEHP	EMP - Mine	Project description	The EM Plan does not include the lot and plan details of the project area. Section 203 of the EP Act states that the EM Plan must describe the "the land on which the mining activities are to be carried out".	The EM Plan should include the lot and plan details of the project area.	Volume 2 Section 13 Environmental Management Plan (Mine)	The Mine EMP has been revised and prepared as supporting information for the project as due to legislative changes, the EMP is no longer a required document for the Environmental Authority application. The EIS provides full details of Land Tenure in Volume 2 Section 4 and Volume 4 Appendix M.
40	DEHP	EMP - Mine	Sensitive Receptors	The EM Plan does not include the nearby nature refuges as 'sensitive areas'. The Environmental Protection Policy (Noise) 2008 states that a sensitive receptor is a 'protected area' as defined under the Nature Conservation Act 1992 (NCA). A nature refuge is a protected area under the NCA.	The EM Plan should include the nearby nature refuges as a sensitive area.	Volume 2 Section 13 Environmental Management Plan (Mine) Section 13.16 (Air Quality) and Section 13.18.2 (Noise and Vibration)	The Mine EMP has been revised and inconsistencies addressed. Please refer to SEIS Volume 4, Appendix Q1.
40	DEHP	EMP - Mine	Air Quality	The environmental values section (s13.16.2) of the EM Plan does not include background air quality monitoring data or air quality modelling. A synopsis of the background air quality monitoring data and air quality modelling (as detailed in Volume 2 Section 7 of the EIS) needs to be included in the EM Plan	The EM Plan should include a summary of the background dust data and the associated modelling detailed in Volume 2 Section 7 Air Quality. This will better demonstrate the impacts that the proposal will have on the sensitive receptors and will therefore assist in developing appropriate environmental protection objectives and control strategies to protect and enhance the environmental values.	Volume 2 Section 13 Environmental Management Plan (Mine) Section 13.16 (Air Quality)	The EMPs presented in the EIS are proposed project implementation documents providing a framework for the management, monitoring and mitigation of key project impacts arising from the EIS. These EMPs are not the primary impact assessment document. Where there has been an amendment to impact assessment studies and findings, these have been reflected in those sections of the SEIS, and if required, included in the SEIS EMPs. For an update to the Mine EMP, please refer to SEIS Volume 4 Appendix Q1 (Mine). For further information on Mine Air Quality assessment please refer to SEIS Volume 4 Appendix L.
40	DEHP	EMP - Mine	Noise	Table 13-25 Summary of Noise Monitoring Results in the EM Plan does not include the noise monitoring data from the EIS report for Noise (Volume 2 Section 9 Noise and Vibration).	The EM Plan should include a summary of background noise monitoring data and modelling from the Noise Report (Volume 2 Section 9 Noise and Vibration).	Volume 2 Section 13 Environmental Management Plan (Mine) Section 13.18.12 Environmental Values	The Noise and Vibration Monitoring and Corrective Action of the draft EMP has been updated to include all the noise monitoring data from the EIS (refer to SEIS Volume 4 Appendix Q1 draft EMP - Mine).
40	DEHP	EMP - Mine	Noise	Table 13-32 Noise and Vibration Monitoring and Corrective Action of the EM Plan does not include all mitigation measures outlined in the EIS report for Noise (Volume 2 Section 9 Noise and Vibration).	It is recommended that mitigation measures outlined on page 9-28 of Volume 2 Section 9 Noise and Vibration are included in the EM Plan.	Volume 2 Section 13 Environmental Management Plan (Mine) Section 13.18.6 Monitoring and corrective action	The Noise and Vibration Monitoring and Corrective Action of the draft EMP has been updated to include all mitigation measures outlined in the EIS report for Noise (refer to SEIS Volume 4 Appendix Q1 draft EMP - Mine).
40	DEHP	EMP - Mine	Mine affected water	This section of the EM Plan is required to outline the management of any proposed releases of mine affected water to the environment. The EM Plan 'proposes' conditions for an Environmental Authority that include release limits. The proposed release conditions and the proposed release limits are not linked to the environmental values identified or the environmental protection commitments. To negotiate a value for 'end-of-pipe' EC limits, it will be necessary to have sufficient background water quality data from historical flow events, ideally above each discharge point. This data should be used to demonstrate that there is sufficient 'assimilative capacity' in receiving waters to receive mine discharges. The EM Plan does not provide the necessary information that the administering authority is required to consider when making a decision relating to an activity that involves the release of water and as such does not provide sufficient information for the administering authority to make a decision under section 203 of the *Environmental Protection Act 1994*.	The EM Plan should address the management of discharges, including justification for the release of specific contaminants to the environment and the management of the release to the environment. It is recommended that the proponent discuss these issues further with EHP officers.	Volume 2 Section 13 Environmental Management Plan (Mine) Section 13.19 Surface water	The Environmental Authority conditions have been moved out of the EMP Mine to the Draft Conditions Report. They have been updated to include additional detail on water management and discharge. Please refer to SEIS Volume 4, Appendix C6.
40	DEHP	EMP - Mine	Mine affected water	The proponent should clarify if it is intended to transfer mine affected water off the mining lease to a third party user. The EIS may address this issue however the EM Plan should clarify the water management system being proposed.	The EM Plan should outline if it is intended to transfer mine affected water off the mining lease to a third party user. Details should be provided on how this would occur.	Volume 2 Section 13 Environmental Management Plan (Mine) Section 13.19 (Surface Water) of the EM Plan	Adani has no intention to transfer mine affected water off the mining lease to a third party user, hence its exclusion from the EMP.

40	DEHP	EMP - Mine	Regulated structures	Section 13.19.10 of the EM Plan does not include enough information regarding the proposed design details of the regulated structures on site.	The EM Plan should include the coordinates and the design details of all proposed regulated structures on site. Details for each regulated structure must include the following in accordance with the Manual for Hazard Categories and Hydraulic Performance of Dams (version 1.3) and the EHP guideline 'Structures which are dams or levees constructed as part of environmentally relevant activities': For regulated dams: - Name of Regulated dam; - A schematic showing the location of the regulated dam and the graphical coordinates of the dam (GDA 94); - The Hazard Category of the dam; - Surface area of dam at spillway (ha); - Maximum volume of dam at spillway (ML); - Maximum depth of dam at spillway (m); - Spillway Level (mAHD); - Use of dam; - Spillway Capacity Annual exceedance probability; - Design Storage Allowance Annual exceedance probability; and - Mandatory Reporting Level Annual exceedance probability.	Volume 2 Section 13 Environmental Management Plan (Mine) Section 13.19.10 (Proposed Environmental Authority Conditions)	Table 17 and 18 of the Draft Environmental Authority conditions have been updated with available information on regulated dams and levees from the updated mine plan. Please refer to SEIS Volume 4, Appendix C6. Note that details of surface area, maximum volume and depth will be available at the detailed design phase.
40	DEHP	EMP - Mine	Regulated structures	Section 13.19.10 of the EM Plan does not include enough information regarding the proposed design details of the regulated structures on site.	For regulated levees: - Name of Regulated Levee; - A schematic showing the location of the levee and the graphical coordinates of the levee (GDA 94); - Design AEP; - Design Flood Level (mAHD); - Minimum Levee Level (mAHD); and - Use of levee Refer to Schedule D Table 1 (Page 15), Schedule D Table 2 (Page 16) and Schedule D Table 4 (Page 17) within the EHP guideline 'Structures which are dams or levees constructed as part of environmentally relevant activities' for the required format of the above requested information.	Volume 2 Section 13 Environmental Management Plan (Mine) Section 13.19.10 (Proposed Environmental Authority Conditions)	Table 17 and 18 of the Draft Environmental Authority conditions have been updated with available information on regulated dams and levees from the updated mine plan. Please refer to SEIS Volume 4, Appendix C6. Note that details of surface area, maximum volume and depth will be available at the detailed design phase.
40	DEHP	EMP - Mine	Regulated structures	There is not enough detail regarding the mine plan to undertake a detailed regulated structures assessment as per the Manual for Hazard Categories and Hydraulic Performance of Dams (version 1.3).	It is recommended that the proponent revise the hazard category assessment undertaken in Section 2.2.2 of the Hazard and Risk report once further detail is developed in relation to the mine plan, predicted water quality and the location of the regulated structures.	Volume 2 Section 13 Environmental Management Plan (Mine) Section 13.19 Surface water	Noted. The requested information has been included within the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment). The traffic count and crash data that is presented in the TIA is the latest data (received July 2013) and it has been acquired from DTMR or from other reports as defined by each of the references.
40	DEHP	Hazard and Risk	Regulated structures	There is not enough detail regarding the mine plan to undertake a detailed regulated structures assessment as per the Manual for Hazard Categories and Hydraulic Performance of Dams (version 1.3).	It is recommended that the proponent revise the hazard category assessment undertaken in Section 2.2.2 of the Hazard and Risk report once further detail is developed in relation to the mine plan, predicted water quality and the location of the regulated structures.	Volume 2 Section 12 Hazard and Risk, Section 12.2.2	See the above response.
40	DEHP	EMP - Mine	Groundwater	The EM Plan does not contain sufficient information to allow the setting of appropriate trigger levels for a groundwater monitoring program.	A groundwater monitoring program must be developed as part of the EIS which includes: - a compilation of representative groundwater samples from the aquifers identified as potentially affected by mining activities; - include at least 12 sampling events, no more than 2 months apart over a 2 year period, to determine background groundwater quality; and - background groundwater quality in hydraulically isolated background bore(s), and - natural groundwater level trends, hydrochemical trigger levels, and contaminant limits.	Volume 2 Section 13 Environmental Management Plan (Mine) Section 13.20 Groundwater	Groundwater assessment was undertaken in accordance with the ToR. Adani has commenced its groundwater monitoring which will provide additional information to assist with the understanding of natural groundwater level trends, hydrochemical trigger levels and contaminant limits. Please refer to SEIS Volume 4, Appendix K1 for the revised Hydrogeological assessment, Appendix Q1 for the revised Mine EMP including groundwater management and mitigation measures and Appendix C6 for the Draft Environmental Authority Conditions. Adani will develop a Groundwater Monitoring Program to be approved by DEHP for the collection of background groundwater data, establishing trends and developing contaminant limits and triggers prior to commencement of construction.
40	DEHP	EMP - Mine	Waste management	The EM Plan indicates that there is the potential for Acid Mine drainage (AMD) at the proposed mine site. The EM Plan does not contain sufficient information regarding the proposed management and identification of AMD on site. Similarly, waste characterisation is deficient.	The following control actions noted on page 13-138 of the EM Plan need to be completed and submitted as part of the EIS: - Confirm preferred disposal and encapsulation strategies for PAF, potentially saline or dispersive waste; - Update the mine plan to ensure that PAF, potentially saline or dispersive waste can be placed directly into a suitable disposal location whereby adverse properties can be managed and impacts avoided; and - Establish an ongoing testing program for mine waste characterisation to be carried out as mining progresses such that the characteristics of mine waste with respect to potential for acid formation, salinity and dispersivity are known prior to excavation. Guidance on characterisation can be found at http://www.inap.com.au/GARDGuide.htm - EHP guides include: http://www.ehp.qld.gov.au/land/mining/technical_guidelines.html http://www.ehp.qld.gov.au/land/mining/guidelines.html	Volume 2 Section 13 Environmental Management Plan (Mine) Section 13.21 Mine waste management	The EMPs presented in the EIS are proposed project implementation documents providing a framework for the management, monitoring and mitigation of key project impacts arising from the EIS. These EMPs are not the primary impact assessment document and hence this submission should refer to the relevant sections of the EIS where this impact assessment and commentary can provide the information sought. Where there has been an amendment to impact assessment studies and findings, these have been reflected in those sections of the SEIS, and if required, included in the SEIS EMPs. For an update to the Mine EMP, please refer to SEIS Volume 4 Appendix Q1 (Mine). For further information on Mine Waste Characterisation and Mine Waste Management Strategy please refer to SEIS Volume 4 Appendices O1 and O2, respectively.
40	DEHP	EMP - Mine	Erosion and Sediment control	Section 13.26.2 (Environmental Values) does not detail the erosive potential of the soils at the project mine nor how these soils will be managed. Section 203 of the EP Act states that an EM Plan must include 'the potential adverse and beneficial impacts of the mining activities on the environmental values'.	The EM Plan should include a description of soil surveys that have been completed and a summary of the management of any erosive potential for soil types/ overburden on the site.	Volume 2 Section 13 Environmental Management Plan (Mine) 13.26 Erosion and Sediment control	The EMPs presented in the EIS are proposed project implementation documents providing a framework for the management, monitoring and mitigation of key project impacts arising from the EIS. These EMPs are not the primary impact assessment document and hence this submission should refer to the relevant sections of the EIS where this impact assessment and commentary can provide the information sought. Where there has been an amendment to impact assessment studies and findings, these have been reflected in those sections of the SEIS, and if required, included in the SEIS EMPs. For soil survey information, please refer to EIS Volume 4 Appendix L. For an update to the Mine EMP, please refer to SEIS Volume 4 Appendix Q1 (Mine).

40	DEHP	EMP - Mine	Erosion and Sediment control	Page 4-67 of Volume 2 Section 4 Land states "*All of the soils within the Project (Mine) are likely to be highly erodible once disturbed due to high fines content and generally poor structural properties (Appendix L). Erosion risk will also be higher on slopes and along drainage lines* ." The EIS does not contain sufficient information regarding the potential for erosion on the mine site to determine if the erosion and sediment control measures proposed are adequate.	The following management plans should be developed as part of the EIS: - A sediment and erosion control plan as referenced on page 13-174 of the EM Plan that covers the construction of the mine site, the mining operation and post mining phases. - A topsoil management plan (referenced on page 3-191 of the EM Plan) - An overburden management plan to manage the potentially dispersive soils mentioned in section 13.21.2 of the EM Plan.	Volume 2 Section 13 Environmental Management Plan (Mine) - 13.26 Erosion and Sediment control Volume 2 Section 4 Land, Page 4-67	Project commitments have been established to develop these plans for approval prior to construction. These commitments are made as conclusions from the impact assessment presented in the EIS and SEIS. Adani will develop an Erosion and Sediment Control Plan, a Topsoil Management Plan and an Overburden Management Plan prior to commencement of construction as addressed in SEIS Volume 4 Appendix Q1 (EMP Mine).
40	DEHP	EMP - Mine	Rehabilitation	The EM Plan does not provide enough detail relating to the rehabilitation of the proposed mine site. Section 203(3) of the Environmental Protection Act (EP Act) states that an EM Plan must contain environmental protection objectives for rehabilitation which (a) include specific rehabilitation objectives and (b) identify the indicators that will be measured to establish when rehabilitation is complete by reference to specific completion criteria.	The EM Plan needs to include: More detailed goals, objectives, indicators and completion criteria for the proposal in accordance with section 203 of the EP Act; Detailed schematics of the final landform; The proposed vegetation species for each domain and coverage range; The pre and post land use based on land suitability classes (based on the Land Suitability Assessment technique); Breakdown of the landform design criteria for each domain with supporting evidence justifying the chosen landform designs; The geographical coordinates and a description of rehabilitation reference sites; and Proposed maintenance, monitoring and reporting of rehabilitated as it is complete.	Volume 2 Section 13 Environmental Management Plan (Mine) Rehabilitation Section 13.34 Rehab and Closure of the EM Plan	Further detail is now provided in the Closure and Rehabilitation Strategy Plan. Please refer to SEIS Volume 4 Appendix R1. Adani will work with DEHP to finalise the Rehabilitation acceptance criteria for the project, including the establishment of appropriate reference sites that are outside the direct and indirect impact from Mining Operations.
40	DEHP	EMP - Mine	Rehabilitation	(as above)	The EHP guideline 'Rehabilitation requirements for mining projects guideline (Version 1)' support these comments and provides further guidance on developing these rehabilitation criteria. It is noted that this guideline identifies that completion criteria will be conditioned into an Environmental Authority and is based on the completion criteria proposed by the client within the EM Plan. It is suggested that the proponent review this guideline and organise a meeting with EHP officers to further discuss the requirements of rehabilitation for the mining project.	Volume 2 Section 13 Environmental Management Plan (Mine) Rehabilitation Section 13.34 Rehab and Closure of the EM Plan	Further detail is now provided in the Closure and Rehabilitation Strategy Plan. Please refer to SEIS Volume 4 Appendix R1. Discussions were held with DEHP regarding the Rehabilitation content in the EMP. It is envisaged that ongoing discussions will be required in order to finalise these plans prior to the commencement of operations.
40	DEHP	EMP - Mine	Rehabilitation	Table 13.106 within the EM Plan does not provide enough detail regarding the domains of the proposed mining operation. The EIS should clearly show: - The location of all infrastructure on site (including landfill, coal handing and preparation plant, sewage treatment, train load out facility, and power plant); - Pits/Voids/ Overburden and Rejects Emplacement; - Regulated dams and levees; - Sediment dams; - Watercourses and water course diversions; - Exploration sites; and - Run of Mine (ROM) stockpiles.	Table 13.106 of the EM Plan should include - A further breakdown of the domains into sub domains - A detailed description of each domain - The geographical coordinates of the domain - The maximum surface area of the domain - The proposed vegetation species for each domain and their coverage range - A schematics of the final landform showing each of the domains	Volume 2 Section 13 Environmental Management Plan (Mine) Rehabilitation Section 13.34 Rehab and Closure of the EM Plan	Further detail is now provided in the Closure and Rehabilitation Strategy Plan. Please refer to SEIS Volume 4 Appendix R1. Adani has provided a draft rehabilitation strategy for the Mine. This strategy will be developed in consultation with DEHP to enable appropriate rehabilitation conditions to be established in the Environmental Authority.
40	DEHP	EMP - Mine	Rehabilitation	There is not enough supporting information to justify the proposed final landform slopes outlined in section 13.34 of the EM Plan The proponent has proposed final landform slopes of up to 20% in the EM Plan however information contained in other reports within the EIS suggests that these slopes would be unachievable: - Page 4-61 of Volume 2 Section 4 Land states "The height and slopes of the final landform cannot be determined without detailed geotechnical investigations which have not been completed." - Page 73 of Appendix L states that mine will not be able to achieve final landform slopes of more than 10% due to poor soils on site.	Any SEIS should provide supporting geotechnical information to justify the chosen final landform in the EM Plan. Recommendations made within EIS and SEIS technical reports should be consistent with the information provided in the EM Plan.	Volume 2 Section 13 Environmental Management Plan (Mine) Rehabilitation Section 13.34 Rehab and Closure of the EM Plan	Final landform details have been developed based on geotechnical information which was presented in the EIS and updated for the SEIS from ongoing exploration activities. Further detail is now provided in the Closure and Rehabilitation Strategy Plan. Please refer to SEIS Volume 4 Appendix R1. Section 4.1.1 of appendix R1 states out-of-pit spoil dumps will be re-profiled to achieve slopes of and degrees or less - within void slopes will be 12-14 degrees. Highwalls will have slopes of up to 22 degrees (Section 6.1.2). Conceptual final land use shown in Figure 4.2. The EMP Mine has been updated to reflect the technical reports and Closure and Rehabilitation Strategy Plan.
40	DEHP	EMP - Mine	Subsidence management	Page 4-73 of Volume 2 Section 4 Land predicts up to 9 meter subsidence at the proposed mine. This amount of subsidence over the mine site will present considerable risks to existing vegetation, groundwater and have major consequences for the proposed final landform.	The EM Plan must include: - A map of the subsided areas in the final landform; - The expected impact that subsidence will have on vegetation growth; - The risk of subsidence causing a connection between groundwater aquifers and surface water; - The expected impact that subsided areas in the final landform will have on the post land use; and - a subsidence management plan which details the management and monitoring of environmental impacts of subsidence from the mining activity. It is recommended that the proponent meet with EHP officers to discuss the requirements of a subsidence management plan.	Volume 2 Section 13 Environmental Management Plan (Mine) 13.31 Subsidence Management of the EM Plan	Whilst the Revised EMP Mine does not provide a map with subsidence areas, the outcomes of the revised subsidence assessment (refer to SEIS Volume 4 Appendix I1) have been updated showing a reduction of subsidence from 9m to 5m. Please refer to SEIS Volume 4 Appendix Q1 for the revised EMP Mine. Also refer to Volume 4 Appendix I1 for the Revised Subsidence Assessment report, and Volume 4 Appendix K4 for details of flooding predictions over subsidence areas. Adani has also developed a Draft Subsidence Management Plan, SEIS Volume 4, Appendix I2, which assesses impacts on SSBV and MNES and proposes mitigation and management measures to minimise potential impacts.
40	DEHP	EMP - Mine	Subsidence management	There are inconsistencies between the EM Plan and the other EIS documentation. For example page 13-202 states that the total depth of subsidence of the AB1 and D1 seams will be up to 7.5 meters however Page 4-73 of Volume 2 Section 4 Land predicts up to 9 meter subsidence.	Recommendations made within the EIS reports should be consistent with the information provided in the EM Plan.	Volume 2 Section 13 Environmental Management Plan (Mine) 13.31 Subsidence Management of the EM Plan	The outcomes of the revised subsidence assessment (refer to SEIS Volume 4 Appendix I1) have been updated showing a reduction of subsidence from 9m to 5m. Please refer to SEIS Volume 4 Appendix Q1 for the revised EMP Mine.

41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Land	Stock routes	The EIS does not give sufficient weight to the importance of the Stock Route Network (SRN) nor does the EIS provide sufficient detail as to whether alternatives were considered to avoid the loss of SRN. Instead Adani states the alternatives are limited by suggesting that the loss is inevitable due to the open mine plan or subsidence from underground mining rather than seeking to modify its mine plan.	Accordingly Hughes submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Hughes) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Hughes' livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments regarding the stock route have been noted. There will be no of SRN resulting from the Project, with impacts being limited to realignment and implementation of management at SRN interfaces with the Project. The realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders. Refer to SEIS Volume 4, Appendix G Section 2.3.3 commitment M3.30.
41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Land	Stock routes	To be clear, the SRN is primarily used by the pastoral industry as an alternative to transporting stock by rail or road, and for pasture for emergency agistment and long-term grazing. It is used by utility companies to provide power lines, pipelines and telecommunications; and by the community generally for road transport, and recreational and other purposes such as beekeeping. The Queensland SRN is a highly valued land management tool in respect of its environmental and iconic cultural heritage values, which are recognised nationally as being of significance. Recent droughts have also established the importance of management arrangements for the SRN as the stock route network during times of drought accrues has accrued in greater significance for example in 2002-03. The pattern of stock route use remains one of periodic grazing; relatively short, infrequent periods of intense grazing interspersed with long periods of light or no grazing. Stock cannot walk the stock routes unless both pasture and water are present.	Accordingly Hughes submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Hughes) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Hughes' livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Land	Stock routes	The EIS does not address nor does it consider the significance of a loss of the SRN (whether on a long term or temporary basis) as to impacts on the business of landholders who use the stock routes (or may in the future) including: • Cultural and historical values associated with SRN activities such as sites of stock route facilities; family and personal connections to certain stock routes for both indigenous and non-indigenous peoples; and intrinsic cultural values associated with the simple existence of the stock route network and its linkage to exploration and settlement. • Economic values associated with providing employment to drovers and providing more economical alternatives for moving stock. The increased costs as a result of having to relocate stock routes including increased management costs to Hughes. Environmental values associated with the benefits to the environment from walking stock routes as opposed to trucking or transporting by rail (e.g. reduced emissions). • Social values associated with employment opportunities in the droving and pastoral industries as well as local governments.	Accordingly Hughes submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Hughes) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Hughes' livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Cumulative impacts	Biodiversity loss	At page 8-22 of the EIS chapter in respect of cumulative impacts Adani states: Given the presence and prevalence of the black-throated finch (southern) in the Project Area, and given mining activity is expected to remove and extensively degrade large tracts of habitat for this endangered species, the Project has the potential to significantly impact upon this subspecies if mitigation is not provided. As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. The black-throated finch has the potential to be cumulatively impacted by other projects in the Study Area. There is potential habitat within the Alpha Coal Project, Galilee Coal (Northern Export Facility) and Kevin's Comer Project to be removed. This increased pressure on black-throated finch habitat in the Study Area is likely to exacerbate the potential significant impact from the Project.	Hughes' position is: A Project approval would be inconsistent with the Honourable Tony Burke Minister for Sustainability, Environment, Water, Population and Communities approval of 23 August 2012, in respect of the Alpha Coal mine and rail Project approved which conditioned the approval on the basis that: o the proponent (GVK Hancock) established a trust, with initial funding of $2 million, to conduct research on the black-throated finch and the squatter pigeon, with provision for a more strategic approach to protect all key species in the Galilee Basin in the event that any further mines are approved in the Galilee Basin	Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Cumulative impacts	Biodiversity loss	Accordingly the present Project if approved would add to further pressure on an endangered species of the Galilee Basin (e.g. Black-Throated Finch) at time when strategic approach to protection has yet to be endorsed or considered by State and Federal Governments.		Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.

41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Cumulative impacts	Biodiversity loss	It is neither adequate nor sufficient for a Project of the scale proposed by Adani to not provide an alternative solution in respect of loss of biodiversity other than stating at Section 8-22: *The Project will be required to provide offsets in accordance with Commonwealth and State policies for these unavoidable impacts on habitat.* No reasonable measure has been provided in the EIS to address this fundamental issue.		Volume 1, Section 8.3.2.1, page 8-22	Adani has taken all measure to minimise impacts on biodiversity through appropriate sighting of infrastructure, design, mitigation measures and consideration of existing ecology. Similarly to other mining projects, residual impacts are unavoidable hence the need to offset. For further information on the mitigation measures to reduce impacts on biodiversity please refer to SEIS Volume 4, Appendix J1 for the revised Mine Ecology Report. and EIS Volume 4 Appendix AA Rail Ecology Report.
41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Cumulative impacts	Biodiversity loss	The EIS should be refused on this ground as the EIS has not had proper regard to the object as set out in section 3 and section 223 of the EPA, as: • The Project fails to protect Queensland's environment whilst simultaneously permitting development seeking to improve the quality of life now and into the future which would maintain ecological processes on which life depends.	• The Project is not consistent with the principles of ecologically sustainable development as: o Long and short term economic, environmental, social and equity considerations must be effectively integrated in the decision making process. o Threats of serious or irreversible environmental damage or a deficient outcome in respect of an environmental investigation is insufficient grounds to delay measures to prevent environmental degradation. o The rail (and mine) will cause serious environmental harm (i.e. dust, noise and vibration) to the character and values of the Land as a result of inter alia coal dust. This is not in the public interest. o The employment, royalties and other benefits that the minelrail will generate must be balanced against the impact on Hughes' land and cattle grazing operations together with the impact on the biodiversity and environment. The outcome must be balanced in favour of public interest or consistent with the EPA.	Volume 1, Section 8.3.2.1, page 8-22	The Carmichael Coal Mine and Rail Project EIS and SEIS has been prepared in accordance with the ToR issued for the project. The EIS for the project has considered environmental, economic and social impacts and benefits. The EIS for the project has considered alternatives to the project and cumulative impacts. The project design and operating parameters have considered short, medium and long term requirements. Potential impacts have been addressed through the avoidance, mitigation and offset hierarchy, This hierarchy is endorsed by both the Federal and State governments and has been applied to similar projects in the same region. The project EIS did not conclude that serious environmental and hence social impacts will be caused as a result of coal dust. The project EIS was considered over local, regional and State areas. Public interest for the EIS was sought and the SEIS has been prepared in accordance with that public interest. Further supporting detail can be found in Volumes 1 through 4 of the SEIS.
41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Climate, Natural Hazards and Climate Change	Flooding	The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five (5) years so the cumulative impact of geomorphic changes from diversions and other infrastructure will be additional.		Vol 3, Section 6.1.3.1, page 6-24	Comments regarding the cumulative impacts of the Project (Rail) on land form changes have been noted. Assessment of cumulative geomorphic changes are discussed in SEIS Volume 1 Section 8 Cumulative Impacts.
41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Climate, Natural Hazards and Climate Change	Flooding	The Belyando River can be 30-40 kilometres (km) wide in big flood events. The floodplains within the study area are generally used for grazing beef cattle which is of interest to Hughes being a cattle grazier. The modelling conducted for the EIS is insufficient to establish the true extent of flooding that may arise as the information about the Project development (concept design), for example the Project (Rail) is unable to specify bridge lengths. As such, the magnitude of any afflux, and its impacts on farm roads and other flood plain assets relevant to Hughes, is only defined as a range (Volume 3, Section 6.1). On this basis, Adani admits it requires further subsequent modelling once the concept design has been advanced and that cumulative interactions will be taken into account at this stage and it is expected that a design solution can be developed that will avoid significant exacerbation of afflux or flooding extent.	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that Hughes can understand the impacts of the Project in terms of flooding on Hughes' business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to Hughes and Hughes' cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken (including bridge spans) and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Climate, Natural Hazards and Climate Change	Flooding	Further Adani then states that in general, there is no defined acceptance criterion for afflux caused by railways that applies uniformly to all projects. Achieving a zero afflux outcome is impractical and, normally, the final result is in Adani terms a compromise [at 6-26 Carmichael Coal Mine and Rail Project].	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that Hughes can understand the impacts of the Project in terms of flooding on Hughes' business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to Hughes and Hughes' cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	The comments on known flood risk is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Climate, Natural Hazards and Climate Change	Flooding	To be clear: The landscape traversed by the rail corridor is characterised by relatively flat floodplains dominated by rivers and creeks which have reasonably well defined channels lying within wider floodplains that are inundated during flood events. Adani's Environmental Management Plan premise for mitigation provides that some level of flooding will have to be accepted by landholders as part of the approval. This comes at a significant cost to Hughes and results in a monetary loss directly caused by the Project.	Hughes' position is: • The Project will impact of a number of cattle and grain producing businesses including Hughes. • Landholders (Hughes) each of presently have to deal with arrange of natural flood events which are only going to be further exasperated by poorly managed development options, including multiple mines and rail corridors in close proximity to each other. • As evidenced by cumulative risk raking provided by Adani, the significance of flooding is severely underestimated by reference to the Project Hazard and Risk Assessment Volume 3 Section 12 as flooding not ranked even high. • The Project will have similar effects to the already approved GVK- Hancock Alpha project and in combination will add to the effects these developments will have on the highly productive flood plains of the upper Belyando and Suttor Rivers. • The Project must be conditioned to provide maximum benefit for future development in both mining and agriculture and not just to Adani's preferred cost benefit scenario.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Land	Good Quality Agricultural Land	The Queensland Government recognises that Good Quality Agricultural Land (GQAL) is a finite resource as are outlined in the State Planning Policy (SPP) 1/92 Development and Conservation of Good Quality Agricultural Land. Using the area of land currently being mined/impacted as a proxy for the extent of impacts is far too simplistic as Adani proposes. Figure 4.10 of the EIS affirms much of the surrounding area is covered by exploration permits. Perusing the Project simply exacerbates the issues and causes increased costs, time and loss of amenity to Hughes.	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding the preference for a single rail corridor to protect GQAL is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W EMP - Rail). Comments regarding the impact of the mine on GQAL have been noted. The mine plan has been developed to minimise the impact of the Project (Mine) on GQAL. Relevant mitigation and management measures have been outlined where relevant into the Project (Mine) draft EMP and the draft Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix Q1 and R1, respectively).

41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	Land	Good Quality Agricultural Land	In addition, coal dust from the rail will impact upon the air, grass and water which Hughes' operates the cattle grazing business. The coal dust will permeate the water from which Hughes and Hughes' cattle drink. In addition, the coal dust will coat the grasses that Hughes' cattle consume. Cattle will not consume grass which has been affected by air-borne particles, changing the taste. This will in turn have an adverse effect on the weight gains made by the cattle and the resulting cost that Hughes' is able to obtain for the cattle at market. [t may also result in an increase in the number of cattle losses (inadequate weight gain or coal dust toxins found in the air/water/grass). Hughes' will also be subject to a reduction in the quality of the air, water and ambiance that existed previously to the proposed Project. Impacts also include noise pollution and vibration from the mine/rail line.		Vol 3, Section 4	Comments regarding coal dust impacts on grazing activities have been noted. The air quality assessment conducted during the EIS concluded that air quality objectives of the EPP(Air) will be met. Further, a study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust. There is no evidence to support a claim that cattle will not feed on pastures affected by air-borne particles. A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
41	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC99)	General comment	General comment	Hughes will be adversely affected by the proposed railway line running directly through Wentworth namely through: • Loss of Vegetation/Good Quality Agricultural Land • Loss of Stock Routes/I ncreased Management Costs • Flooding and Hydraulics Impacts • Unacceptable Cumulative Impacts including adverse impacts on threatened Biodiversity. Hughes' position is that Adani have proposed an open-cut and underground coal mine and railway line that in its present form has unacceptable impacts for landowners and communities because of the disruption it causes to cattle operations and the local environs. Due to the long term and irreversible impacts that the Project will have on Hughes, Hughes' business and the environment the application for the Project should be refused.		n/a	Comments are noted. Responses to specific comment are provided herein.
42	Emanate on behalf of Philp (Wyena)	Land	Stock routes	The EIS does not give sufficient weight to the importance of the Stock Route Network (SRN) nor does the EIS provide sufficient detail as to whether alternatives were considered to avoid the loss of SRN. Instead Adani states the alternatives are limited by suggesting that the loss is inevitable due to the open mine plan or subsidence from underground mining rather than seeking to modify its mine plan.	Accordingly Philp submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Philp) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Philp's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments regarding the stock route have been noted. There will be no of SRN resulting from the Project, with impacts being limited to realignment and implementation of management at SRN interfaces with the Project. The realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders. Refer to SEIS Volume 4, Appendix G Section 2.3.3 commitment M3.30.
42	Emanate on behalf of Philp (Wyena)	Land	Stock routes	To be clear, the SRN is primarily used by the pastoral industry as an alternative to transporting stock by rail or road, and for pasture for emergency agistment and long-term grazing. It is used by utility companies to provide power lines, pipelines and telecommunications; and by the community generally for road transport, and recreational and other purposes such as beekeeping. The Queensland SRN is a highly valued land management tool in respect of its environmental and iconic cultural heritage values, which are recognised nationally as being of significance. Recent droughts have also established the importance of management arrangements for the SRN as the stock route network during times of drought accrues has accrued in greater significance for example in 2002-03. The pattern of stock route use remains one of periodic grazing; relatively short, infrequent periods of intense grazing interspersed with long periods of light or no grazing. Stock cannot walk the stock routes unless both pasture and water are present.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
42	Emanate on behalf of Philp (Wyena)	Land	Stock routes	The EIS does not address nor does it consider the significance of a loss of the SRN (whether on a long term or temporary basis) as to impacts on the business of landholders who use the stock routes (or may in the future) including: • Cultural and historical values associated with SRN activities such as sites of stock route facilities; family and personal connections to certain stock routes for both indigenous and non-indigenous peoples; and intrinsic cultural values associated with the simple existence of the stock route network and its linkage to exploration and settlement. • Economic values associated with providing employment to drovers and providing more economical alternatives for moving stock. The increased costs as a result of having to relocate stock routes including increased management costs to Philp. Environmental values associated with the benefits to the environment from walking stock routes as opposed to trucking or transporting by rail (e.g. reduced emissions). • Social values associated with employment opportunities in the droving and pastoral industries as well as local governments.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.

42	Emanate on behalf of Philp (Wyena)	Cumulative impacts	Biodiversity loss	At page 8-22 of the EIS chapter in respect of cumulative impacts Adani states: Given the presence and prevalence of the black-throated finch (southern) in the Project Area, and given mining activity is expected to remove and extensively degrade large tracts of habitat for this endangered species, the Project has the potential to significantly impact upon this subspecies if mitigation is not provided. As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. The black-throated finch has the potential to be cumulatively impacted by other projects in the Study Area. There is potential habitat within the Alpha Coal Project, Galilee Coal (Northern Export Facility) and Kevin's Comer Project to be removed. This increased pressure on black-throated finch habitat in the Study Area is likely to exacerbate the potential significant impact from the Project.	Philp's position is: A Project approval would be inconsistent with the Honourable Tony Burke Minister for Sustainability, Environment, Water, Population and Communities approval of 23 August 2012, in respect of the Alpha Coal mine and rail Project approved which conditioned the approval on the basis that: o the proponent (GVK Hancock) established a trust, with initial funding of $2 million, to conduct research on the black-throated finch and the squatter pigeon, with provision for a more strategic approach to protect all key species in the Galilee Basin in the event that any further mines are approved in the Galilee Basin	Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
42	Emanate on behalf of Philp (Wyena)	Cumulative impacts	Biodiversity loss	Accordingly the present Project if approved would add to further pressure on an endangered species of the Galilee Basin (e.g. Black-Throated Finch) at time when strategic approach to protection has yet to be endorsed or considered by State and Federal Governments.		Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
42	Emanate on behalf of Philp (Wyena)	Cumulative impacts	Biodiversity loss	It is neither adequate nor sufficient for a Project of the scale proposed by Adani to not provide an alternative solution in respect of loss of biodiversity other than stating at Section 8-22: *The Project will be required to provide offsets in accordance with Commonwealth and State policies for these unavoidable impacts on habitat.* No reasonable measure has been provided in the EIS to address this fundamental issue.		Volume 1, Section 8.3.2.1, page 8-22	Adani has taken all measure to minimise impacts on biodiversity through appropriate sighting of infrastructure, design, mitigation measures and consideration of existing ecology. Similarly to other mining projects, residual impacts are unavoidable hence the need to offset. For further information on the mitigation measures to reduce impacts on biodiversity please refer to SEIS Volume 4, Appendix J1 for the revised Mine Ecology Report. and EIS Volume 4 Appendix AA Rail Ecology Report.
42	Emanate on behalf of Philp (Wyena)	Cumulative impacts	Biodiversity loss	The EIS should be refused on this ground as the EIS has not had proper regard to the object as set out in section 3 and section 223 of the EPA, as: • The Project fails to protect Queensland's environment whilst simultaneously permitting development seeking to improve the quality of life now and into the future which would maintain ecological processes on which life depends.	• The Project is not consistent with the principles of ecologically sustainable development as: o Long and short term economic, environmental, social and equity considerations must be effectively integrated in the decision making process. o Threats of serious or irreversible environmental damage or a deficient outcome in respect of an environmental investigation is insufficient grounds to delay measures to prevent environmental degradation. o The rail (and mine) will cause serious environmental harm (i.e. dust, noise and vibration) to the character and values of the Land as a result of inter alia coal dust. This is not in the public interest. o The employment, royalties and other benefits that the minelrail will generate must be balanced against the impact on Philp's land and cattle grazing operations together with the impact on the biodiversity and environment. The outcome must be balanced in favour of public interest or consistent with the EPA.	Volume 1, Section 8.3.2.1, page 8-22	The Carmichael Coal Mine and Rail Project EIS and SEIS has been prepared in accordance with the ToR issued for the project. The EIS for the project has considered environmental, economic and social impacts and benefits. The EIS for the project has considered alternatives to the project and cumulative impacts. The project design and operating parameters have considered short, medium and long term requirements. Potential impacts have been addressed through the avoidance, mitigation and offset hierarchy, This hierarchy is endorsed by both the Federal and State governments and has been applied to similar projects in the same region. The project EIS did not conclude that serious environmental and hence social impacts will be caused as a result of coal dust. The project EIS was considered over local, regional and State areas. Public interest for the EIS was sought and the SEIS has been prepared in accordance with that public interest. Further supporting detail can be found in Volumes 1 through 4 of the SEIS.
42	Emanate on behalf of Philp (Wyena)	Water Resources	Flooding	The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five (5) years so the cumulative impact of geomorphic changes from diversions and other infrastructure will be additional.		Vol 3, Section 6.1.3.1, page 6-24	Cumulative impacts related to other developments near the Project (Mine) are discussed further in SEIS Volume 1 Section 8 Cumulative impacts.
42	Emanate on behalf of Philp (Wyena)	Water Resources	Flooding	The Belyando River can be 30-40 kilometres (km) wide in big flood events. The floodplains within the study area are generally used for grazing beef cattle which is of interest to Philp being a cattle grazier. The modelling conducted for the EIS is insufficient to establish the true extent of flooding that may arise as the information about the Project development (concept design), for example the Project (Rail) is unable to specify bridge lengths. As such, the magnitude of any afflux, and its impacts on farm roads and other flood plain assets relevant to Philp, is only defined as a range (Volume 3, Section 6.1). On this basis, Adani admits it requires further subsequent modelling once the concept design has been advanced and that cumulative interactions will be taken into account at this stage and it is expected that a design solution can be developed that will avoid significant exacerbation of afflux or flooding extent.		Vol 3, Section 6.1.3.1	Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Adani has also undertaken engaged with landholders with regard to the flood modelling. Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
42	Emanate on behalf of Philp (Wyena)	Water Resources	Flooding	Further Adani then states that in general, there is no defined acceptance criterion for afflux caused by railways that applies uniformly to all projects. Achieving a zero afflux outcome is impractical and, normally, the final result is in Adani terms a compromise [at 6-26 Carmichael Coal Mine and Rail Project].	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that Philp can understand the impacts of the Project in terms of flooding on Philp's business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to Philp and Philp's cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Adani has also undertaken engaged with landholders with regard to the flood modelling. Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.

42	Emanate on behalf of Philp (Wyena)	Water Resources	Flooding	To be clear: The landscape traversed by the rail corridor is characterised by relatively flat floodplains dominated by rivers and creeks which have reasonably well defined channels lying within wider floodplains that are inundated during flood events. Adani's Environmental Management Plan premise for mitigation provides that some level of flooding will have to be accepted by landholders as part of the approval. This comes at a significant cost to Philp and results in a monetary loss directly caused by the Project.	Philp's position is: • The Project will impact of a number of cattle and grain producing businesses including Philp.• Landholders (Philp) each of presently have to deal with arrange of natural flood events which are only going to be further exasperated by poorly managed development options, including multiple mines and rail corridors in close proximity to each other. • As evidenced by cumulative risk raking provided by Adani, the significance of flooding is severely underestimated by reference to the Project Hazard and Risk Assessment Volume 3 Section 12 as flooding not ranked even high. • The Project will have similar effects to the already approved GVK- Hancock Alpha project and in combination will add to the effects these developments will have on the highly productive flood plains of the upper Belyando and Suttor Rivers. • The Project must be conditioned to provide maximum benefit for future development in both mining and agriculture and not just to Adani's preferred cost benefit scenario.	Vol 3, Section 6.1.3.1	Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Adani has also undertaken engaged with landholders with regard to the flood modelling. Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
42	Emanate on behalf of Philp (Wyena)	Land	Good Quality Agricultural Land	The Queensland Government recognises that Good Quality Agricu[tural Land (GQAL) is a finite resource as are outlined in the State Planning Policy (SPP) 1/92 Development and Conservation of Good Quality Agricultural Land. Using the area of land currently being mined/impacted as a proxy for the extent of impacts is far too simplistic as Adani proposes. Figure 4.10 of the EIS affirms much of the surrounding area is covered by exploration permits. Perusing the Project simply exacerbates the issues and causes increased costs, time and loss of amenity to Philp.	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding the preference for a single rail corridor to protect GQAL is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W EMP - Rail). Comments regarding the impact of the mine on GQAL have been noted. The mine plan has been developed to minimise the impact of the Project (Mine) on GQAL. Relevant mitigation and management measures have been outlined where relevant into the Project (Mine) draft EMP and the draft Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix Q1 and R1, respectively).
42	Emanate on behalf of Philp (Wyena)	Land	Good Quality Agricultural Land	In addition, coal dust from the rail will impact upon the air, grass and water which Philp operates the cattle grazing business. The coal dust will permeate the water from which Philp and Philp's cattle drink. In addition, the coal dust will coat the grasses that Philp's cattle consume. Cattle will not consume grass which has been affected by air-borne particles, changing the taste. This will in turn have an adverse effect on the weight gains made by the cattle and the resulting cost that Philp is able to obtain for the cattle at market. It may also result in an increase in the number of cattle losses (inadequate weight gain or coal dust toxins found in the air/water/grass). Philp will also be subject to a reduction in the quality of the air, water and ambiance that existed previously to the proposed Project. Impacts also include noise pollution and vibration from the mine/rail line.	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding coal dust impacts on grazing activities have been noted. The air quality assessment conducted during the EIS concluded that air quality objectives of the EPP(Air) will be met. Further, a study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust. There is no evidence to support a claim that cattle will not feed on pastures affected by air-borne particles. A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
42	Emanate on behalf of Philp (Wyena)	General comment	General comment	Philp will be adversely affected by the proposed railway line running directly through Wyena namely through: • Loss of Vegetation/Good Quality Agricultural Land • Loss of Stock Routes/I ncreased Management Costs • Flooding and Hydraulics Impacts • Unacceptable Cumulative Impacts including adverse impacts on threatened Biodiversity. Philp's position is that Adani have proposed an open-cut and underground coal mine and railway line that in its present form has unacceptable impacts for landowners and communities because of the disruption it causes to cattle operations and the local environs. Due to the long term and irreversible impacts that the Project will have on Philp, Philp's business and the environment the application for the Project should be refused.		n/a	Comments are noted. Responses to specific comment are provided herein.
43	Emanate on behalf of Scott (Mallawa)	Land	Stock routes	The EIS does not give sufficient weight to the importance of the Stock Route Network (SRN) nor does the EIS provide sufficient detail as to whether alternatives were considered to avoid the loss of SRN. Instead Adani states the alternatives are limited by suggesting that the loss is inevitable due to the open mine plan or subsidence from underground mining rather than seeking to modify its mine plan.	Accordingly Scott submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Scott) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Scott's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments regarding the stock route have been noted. There will be no of SRN resulting from the Project, with impacts being limited to realignment and implementation of management at SRN interfaces with the Project. The realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders. Refer to SEIS Volume 4, Appendix G Section 2.3.3 commitment M3.30.

43	Emanate on behalf of Scott (Mallawa)	Land	Stock routes	To be clear, the SRN is primarily used by the pastoral industry as an alternative to transporting stock by rail or road, and for pasture for emergency agistment and long-term grazing. It is used by utility companies to provide power lines, pipelines and telecommunications; and by the community generally for road transport, and recreational and other purposes such as beekeeping. The Queensland SRN is a highly valued land management tool in respect of its environmental and iconic cultural heritage values, which are recognised nationally as being of significance. Recent droughts have also established the importance of management arrangements for the SRN as the stock route network during times of drought accrues has accrued in greater significance for example in 2002-03. The pattern of stock route use remains one of periodic grazing; relatively short, infrequent periods of intense grazing interspersed with long periods of light or no grazing. Stock cannot walk the stock routes unless both pasture and water are present.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
43	Emanate on behalf of Scott (Mallawa)	Land	Stock routes	The EIS does not address nor does it consider the significance of a loss of the SRN (whether on a long term or temporary basis) as to impacts on the business of landholders who use the stock routes (or may in the future) including: • Cultural and historical values associated with SRN activities such as sites of stock route facilities; family and personal connections to certain stock routes for both indigenous and non-indigenous peoples; and intrinsic cultural values associated with the simple existence of the stock route network and its linkage to exploration and settlement. • Economic values associated with providing employment to drovers and providing more economical alternatives for moving stock. The increased costs as a result of having to relocate stock routes including increased management costs to Scott. Environmental values associated with the benefits to the environment from walking stock routes as opposed to trucking or transporting by rail (e.g. reduced emissions). • Social values associated with employment opportunities in the droving and pastoral industries as well as local governments.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
43	Emanate on behalf of Scott (Mallawa)	Cumulative impacts	Biodiversity loss	At page 8-22 of the EIS chapter in respect of cumulative impacts Adani states: Given the presence and prevalence of the black-throated finch (southern) in the Project Area, and given mining activity is expected to remove and extensively degrade large tracts of habitat for this endangered species, the Project has the potential to significantly impact upon this subspecies if mitigation is not provided. As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. The black-throated finch has the potential to be cumulatively impacted by other projects in the Study Area. There is potential habitat within the Alpha Coal Project, Galilee Coal (Northem Export Facility) and Kevin's Comer Project to be removed. This increased pressure on black-throated finch habitat in the Study Area is likely to exacerbate the potential significant impact from the Project.	Scott's position is: A Project approval would be inconsistent with the Honourable Tony Burke Minister for Sustainability, Environment, Water, Population and Communities approval of 23 August 2012, in respect of the Alpha Coal mine and rail Project approved which conditioned the approval on the basis that: o the proponent (GVK Hancock) established a trust, with initial funding of $2 million, to conduct research on the black-throated finch and the squatter pigeon, with provision for a more strategic approach to protect all key species in the Galilee Basin in the event that any further mines are approved in the Galilee Basin	Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
43	Emanate on behalf of Scott (Mallawa)	Cumulative impacts	Biodiversity loss	Accordingly the present Project if approved would add to further pressure on an endangered species of the Galilee Basin (e.g. Black-Throated Finch) at time when strategic approach to protection has yet to be endorsed or considered by State and Federal Governments.		Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
43	Emanate on behalf of Scott (Mallawa)	Cumulative impacts	Biodiversity loss	It is neither adequate nor sufficient for a Project of the scale proposed by Adani to not provide an alternative solution in respect of loss of biodiversity other than stating at Section 8-22: *The Project will be required to provide offsets in accordance with Commonwealth and State policies for these unavoidable impacts on habitat.* No reasonable measure has been provided in the EIS to address this fundamental issue.		Volume 1, Section 8.3.2.1, page 8-22	Adani has taken all measure to minimise impacts on biodiversity through appropriate sighting of infrastructure, design, mitigation measures and consideration of existing ecology. Similarly to other mining projects, residual impacts are unavoidable hence the need to offset. For further information on the mitigation measures to reduce impacts on biodiversity please refer to SEIS Volume 4, Appendix J1 for the revised Mine Ecology Report. and EIS Volume 4 Appendix AA Rail Ecology Report.

43	Emanate on behalf of Scott (Mallawa)	Cumulative impacts	Biodiversity loss	The EIS should be refused on this ground as the EIS has not had proper regard to the object as set out in section 3 and section 223 of the EPA, as: • The Project fails to protect Queensland's environment whilst simultaneously permitting development seeking to improve the quality of life now and into the future which would maintain ecological processes on which life depends.	• The Project is not consistent with the principles of ecologically sustainable development as: o Long and short term economic, environmental, social and equity considerations must be effectively integrated in the decision making process. o Threats of serious or irreversible environmental damage or a deficient outcome in respect of an environmental investigation is insufficient grounds to delay measures to prevent environmental degradation. o The rail (and mine) will cause serious environmental harm (i.e. dust, noise and vibration) to the character and values of the Land as a result of inter alia coal dust. This is not in the public interest. o The employment, royalties and other benefits that the minelrail will generate must be balanced against the impact on Scott's land and cattle grazing operations together with the impact on the biodiversity and environment. The outcome must be balanced in favour of public interest or consistent with the EPA.	Volume 1, Section 8.3.2.1, page 8-22	The Carmichael Coal Mine and Rail Project EIS and SEIS has been prepared in accordance with the ToR issued for the project. The EIS for the project has considered environmental, economic and social impacts and benefits. The EIS for the project has considered alternatives to the project and cumulative impacts. The project design and operating parameters have considered short, medium and long term requirements. Potential impacts have been addressed through the avoidance, mitigation and offset hierarchy, This hierarchy is endorsed by both the Federal and State governments and has been applied to similar projects in the same region. The project EIS did not conclude that serious environmental and hence social impacts will be caused as a result of coal dust. The project EIS was considered over local, regional and State areas. Public interest for the EIS was sought and the SEIS has been prepared in accordance with that public interest. Further supporting detail can be found in Volumes 1 through 4 of the SEIS.
43	Emanate on behalf of Scott (Mallawa)	Climate, Natural Hazards and Climate Change	Flooding	The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five (5) years so the cumulative impact of geomorphic changes from diversions and other infrastructure will be additional.		Vol 3, Section 6.1.3.1, page 6-24	Comments regarding the cumulative impacts of the Project (Rail) on land form changes have been noted. Assessment of cumulative geomorphic changes are discussed in SEIS Volume 1 Section 8 Cumulative Impacts.
43	Emanate on behalf of Scott (Mallawa)	Climate, Natural Hazards and Climate Change	Flooding	The Belyando River can be 30-40 kilometres (km) wide in big flood events. The floodplains within the study area are generally used for grazing beef cattle which is of interest to Scott being a cattle grazier. The modelling conducted for the EIS is insufficient to establish the true extent of flooding that may arise as the information about the Project development (concept design), for example the Project (Rail) is unable to specify bridge lengths. As such, the magnitude of any afflux, and its impacts on farm roads and other flood plain assets relevant to Scott, is only defined as a range (Volume 3, Section 6.1). On this basis, Adani admits it requires further subsequent modelling once the concept design has been advanced and that cumulative interactions will be taken into account at this stage and it is expected that a design solution can be developed that will avoid significant exacerbation of afflux or flooding extent.	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that Scott can understand the impacts of the Project in terms of flooding on Scott's business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to Scott and Scott's cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken (including bridge spans) and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
43	Emanate on behalf of Scott (Mallawa)	Climate, Natural Hazards and Climate Change	Flooding	Further Adani then states that in general, there is no defined acceptance criterion for afflux caused by railways that applies uniformly to all projects. Achieving a zero afflux outcome is impractical and, normally, the final result is in Adani terms a compromise [at 6-26 Carmichael Coal Mine and Rail Project].		Vol 3, Section 6.1.3.1	The comments on known flood risk is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
43	Emanate on behalf of Scott (Mallawa)	Climate, Natural Hazards and Climate Change	Flooding	To be clear: The landscape traversed by the rail corridor is characterised by relatively flat floodplains dominated by rivers and creeks which have reasonably well defined channels lying within wider floodplains that are inundated during flood events. Adani's Environmental Management Plan premise for mitigation provides that some level of flooding will have to be accepted by landholders as part of the approval. This comes at a significant cost to Scott and results in a monetary loss directly caused by the Project.	Scott's position is: • The Project will impact of a number of cattle and grain producing businesses including Scott. • Landholders (Scott) each of presently have to deal with arrange of natural flood events which are only going to be further exasperated by poorly managed development options, including multiple mines and rail corridors in close proximity to each other. • As evidenced by cumulative risk raking provided by Adani, the significance of flooding is severely underestimated by reference to the Project Hazard and Risk Assessment Volume 3 Section 12 as flooding not ranked even high. • The Project will have similar effects to the already approved GVK- Hancock Alpha project and in combination will add to the effects these developments will have on the highly productive flood plains of the upper Belyando and Suttor Rivers. • The Project must be conditioned to provide maximum benefit for future development in both mining and agriculture and not just to Adani's preferred cost benefit scenario.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
43	Emanate on behalf of Scott (Mallawa)	Land	Good Quality Agricultural Land	The Queensland Government recognises that Good Quality Agricu[tural Land (GQAL) is a finite resource as are outlined in the State Planning Policy (SPP) 1/92 Development and Conservation of Good Quality Agricultural Land. Using the area of land currently being mined/impacted as a proxy for the extent of impacts is far too simplistic as Adani proposes. Figure 4.10 of the EIS affirms much of the surrounding area is covered by exploration permits. Perusing the Project simply exacerbates the issues and causes increased costs, time and loss of amenity to Scott.	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding the preference for a single rail corridor to protect GQAL is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W EMP - Rail). Comments regarding the impact of the mine on GQAL have been noted. The mine plan has been developed to minimise the impact of the Project (Mine) on GQAL. Relevant mitigation and management measures have been outlined where relevant into the Project (Mine) draft EMP and the draft Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix Q1 and R1, respectively).

43	Emanate on behalf of Scott (Mallawa)	Land	Good Quality Agricultural Land	In addition, coal dust from the rail will impact upon the air, grass and water which Scott operates the cattle grazing business. The coal dust will permeate the water from which Scott and Scott's cattle drink. In addition, the coal dust will coat the grasses that Scott's cattle consume. Cattle will not consume grass which has been affected by air-borne particles, changing the taste. This will in turn have an adverse effect on the weight gains made by the cattle and the resulting cost that Scott is able to obtain for the cattle at market. It may also result in an increase in the number of cattle losses (inadequate weight gain or coal dust toxins found in the air/water/grass). Scott will also be subject to a reduction in the quality of the air, water and ambiance that existed previously to the proposed Project. Impacts also include noise pollution and vibration from the mine/rail line.		Vol 3, Section 4	Comments regarding coal dust impacts on grazing activities have been noted. The air quality assessment conducted during the EIS concluded that air quality objectives of the EPP(Air) will be met. Further, a study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust. There is no evidence to support a claim that cattle will not feed on pastures affected by air-borne particles. A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
43	Emanate on behalf of Scott (Mallawa)	General comment	General comment	Scott will be adversely affected by the proposed railway line running directly through Mallawa namely through: • Loss of Vegetation/Good Quality Agricultural Land • Loss of Stock Routes/I ncreased Management Costs • Flooding and Hydraulics Impacts • Unacceptable Cumulative Impacts including adverse impacts on threatened Biodiversity. Scott's position is that Adani have proposed an open-cut and underground coal mine and railway line that in its present form has unacceptable impacts for landowners and communities because of the disruption it causes to cattle operations and the local environs. Due to the long term and irreversible impacts that the Project will have on Scott, Scott's business and the environment the application for the Project should be refused.		n/a	Comments are noted. Responses to specific comment are provided herein.
44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Land	Stock routes	The EIS does not give sufficient weight to the importance of the Stock Route Network (SRN) nor does the EIS provide sufficient detail as to whether alternatives were considered to avoid the loss of SRN. Instead Adani states the alternatives are limited by suggesting that the loss is inevitable due to the open mine plan or subsidence from underground mining rather than seeking to modify its mine plan.	Accordingly Hughes submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Hughes) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Hughes' livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments regarding the stock route have been noted. There will be no of SRN resulting from the Project, with impacts being limited to realignment and implementation of management at SRN interfaces with the Project. The realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders. Refer to SEIS Volume 4, Appendix G Section 2.3.3 commitment M3.30.
44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Land	Stock routes	To be clear, the SRN is primarily used by the pastoral industry as an alternative to transporting stock by rail or road, and for pasture for emergency agistment and long-term grazing. It is used by utility companies to provide power lines, pipelines and telecommunications; and by the community generally for road transport, and recreational and other purposes such as beekeeping. The Queensland SRN is a highly valued land management tool in respect of its environmental and iconic cultural heritage values, which are recognised nationally as being of significance. Recent droughts have also established the importance of management arrangements for the SRN as the stock route network during times of drought accrues has accrued in greater significance for example in 2002-03. The pattern of stock route use remains one of periodic grazing; relatively short, infrequent periods of intense grazing interspersed with long periods of light or no grazing. Stock cannot walk the stock routes unless both pasture and water are present.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Land	Stock routes	The EIS does not address nor does it consider the significance of a loss of the SRN (whether on a long term or temporary basis) as to impacts on the business of landholders who use the stock routes (or may in the future) including: • Cultural and historical values associated with SRN activities such as sites of stock route facilities; family and personal connections to certain stock routes for both indigenous and non-indigenous peoples; and intrinsic cultural values associated with the simple existence of the stock route network and its linkage to exploration and settlement. • Economic values associated with providing employment to drovers and providing more economical alternatives for moving stock. The increased costs as a result of having to relocate stock routes including increased management costs to Hughes. Environmental values associated with the benefits to the environment from walking stock routes as opposed to trucking or transporting by rail (e.g. reduced emissions). • Social values associated with employment opportunities in the droving and pastoral industries as well as local governments.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.

44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Cumulative impacts	Biodiversity loss	At page 8-22 of the EIS chapter in respect of cumulative impacts Adani states: Given the presence and prevalence of the black-throated finch (southern) in the Project Area, and given mining activity is expected to remove and extensively degrade large tracts of habitat for this endangered species, the Project has the potential to significantly impact upon this subspecies if mitigation is not provided. As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. The black-throated finch has the potential to be cumulatively impacted by other projects in the Study Area. There is potential habitat within the Alpha Coal Project, Galilee Coal (Northern Export Facility) and Kevin's Comer Project to be removed. This increased pressure on black-throated finch habitat in the Study Area is likely to exacerbate the potential significant impact from the Project.	Hughes' position is: A Project approval would be inconsistent with the Honourable Tony Burke Minister for Sustainability, Environment, Water, Population and Communities approval of 23 August 2012, in respect of the Alpha Coal mine and rail Project approved which conditioned the approval on the basis that: o the proponent (GVK Hancock) established a trust, with initial funding of $2 million, to conduct research on the black-throated finch and the squatter pigeon, with provision for a more strategic approach to protect all key species in the Galilee Basin in the event that any further mines are approved in the Galilee Basin	Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Cumulative impacts	Biodiversity loss	Accordingly the present Project if approved would add to further pressure on an endangered species of the Galilee Basin (e.g. Black-Throated Finch) at time when strategic approach to protection has yet to be endorsed or considered by State and Federal Governments.		Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Cumulative impacts	Biodiversity loss	It is neither adequate nor sufficient for a Project of the scale proposed by Adani to not provide an alternative solution in respect of loss of biodiversity other than stating at Section 8-22: *The Project will be required to provide offsets in accordance with Commonwealth and State policies for these unavoidable impacts on habitat.* No reasonable measure has been provided in the EIS to address this fundamental issue.		Volume 1, Section 8.3.2.1, page 8-22	Adani has taken all measure to minimise impacts on biodiversity through appropriate sighting of infrastructure, design, mitigation measures and consideration of existing ecology. Similarly to other mining projects, residual impacts are unavoidable hence the need to offset. For further information on the mitigation measures to reduce impacts on biodiversity please refer to SEIS Volume 4, Appendix J1 for the revised Mine Ecology Report. and EIS Volume 4 Appendix AA Rail Ecology Report.
44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Cumulative impacts	Biodiversity loss	The EIS should be refused on this ground as the EIS has not had proper regard to the object as set out in section 3 and section 223 of the EPA, as: • The Project fails to protect Queensland's environment whilst simultaneously permitting development seeking to improve the quality of life now and into the future which would maintain ecological processes on which life depends.	• The Project is not consistent with the principles of ecologically sustainable development as: o Long and short term economic, environmental, social and equity considerations must be effectively integrated in the decision making process. o Threats of serious or irreversible environmental damage or a deficient outcome in respect of an environmental investigation is insufficient grounds to delay measures to prevent environmental degradation. o The rail (and mine) will cause serious environmental harm (i.e. dust, noise and vibration) to the character and values of the Land as a result of inter alia coal dust. This is not in the public interest. o The employment, royalties and other benefits that the minelrail will generate must be balanced against the impact on Hughes' land and cattle grazing operations together with the impact on the biodiversity and environment. The outcome must be balanced in favour of public interest or consistent with the EPA.	Volume 1, Section 8.3.2.1, page 8-22	The Carmichael Coal Mine and Rail Project EIS and SEIS has been prepared in accordance with the ToR issued for the project. The EIS for the project has considered environmental, economic and social impacts and benefits. The EIS for the project has considered alternatives to the project and cumulative impacts. The project design and operating parameters have considered short, medium and long term requirements. Potential impacts have been addressed through the avoidance, mitigation and offset hierarchy, This hierarchy is endorsed by both the Federal and State governments and has been applied to similar projects in the same region. The project EIS did not conclude that serious environmental and hence social impacts will be caused as a result of coal dust. The project EIS was considered over local, regional and State areas. Public interest for the EIS was sought and the SEIS has been prepared in accordance with that public interest. Further supporting detail can be found in Volumes 1 through 4 of the SEIS.
44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Climate, Natural Hazards and Climate Change	Flooding	The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five (5) years so the cumulative impact of geomorphic changes from diversions and other infrastructure will be additional.		Vol 3, Section 6.1.3.1, page 6-24	Comments regarding the cumulative impacts of the Project (Rail) on land form changes have been noted. Assessment of cumulative geomorphic changes are discussed in SEIS Volume 1 Section 8 Cumulative Impacts.
44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Climate, Natural Hazards and Climate Change	Flooding	The Belyando River can be 30-40 kilometres (km) wide in big flood events. The floodplains within the study area are generally used for grazing beef cattle which is of interest to Hughes being a cattle grazier. The modelling conducted for the EIS is insufficient to establish the true extent of flooding that may arise as the information about the Project development (concept design), for example the Project (Rail) is unable to specify bridge lengths. As such, the magnitude of any afflux, and its impacts on farm roads and other flood plain assets relevant to Hughes, is only defined as a range (Volume 3, Section 6.1). On this basis, Adani admits it requires further subsequent modelling once the concept design has been advanced and that cumulative interactions will be taken into account at this stage and it is expected that a design solution can be developed that will avoid significant exacerbation of afflux or flooding extent.	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that Hughes can understand the impacts of the Project in terms of flooding on Hughes' business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to Hughes and Hughes' cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken (including bridge spans) and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Climate, Natural Hazards and Climate Change	Flooding	Further Adani then states that in general, there is no defined acceptance criterion for afflux caused by railways that applies uniformly to all projects. Achieving a zero afflux outcome is impractical and, normally, the final result is in Adani terms a compromise [at 6-26 Carmichael Coal Mine and Rail Project].		Vol 3, Section 6.1.3.1	The comments on known flood risk is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.

44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Climate, Natural Hazards and Climate Change	Flooding	To be clear: The landscape traversed by the rail corridor is characterised by relatively flat floodplains dominated by rivers and creeks which have reasonably well defined channels lying within wider floodplains that are inundated during flood events. Adani's Environmental Management Plan premise for mitigation provides that some level of flooding will have to be accepted by landholders as part of the approval. This comes at a significant cost to Hughes and results in a monetary loss directly caused by the Project.	Hughes' position is: • The Project will impact of a number of cattle and grain producing businesses including Hughes. • Landholders (Hughes) each of presently have to deal with arrange of natural flood events which are only going to be further exasperated by poorly managed development options, including multiple mines and rail corridors in close proximity to each other. • As evidenced by cumulative risk raking provided by Adani, the significance of flooding is severely underestimated by reference to the Project Hazard and Risk Assessment Volume 3 Section 12 as flooding not ranked even high. • The Project will have similar effects to the already approved GVK- Hancock Alpha project and in combination will add to the effects these developments will have on the highly productive flood plains of the upper Belyando and Suttor Rivers. • The Project must be conditioned to provide maximum benefit for future development in both mining and agriculture and not just to Adani's preferred cost benefit scenario.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Land	Good Quality Agricultural Land	The Queensland Government recognises that Good Quality Agricu[tural Land (GQAL) is a finite resource as are outlined in the State Planning Policy (SPP) 1/92 Development and Conservation of Good Quality Agricultural Land. Using the area of land currently being mined/impacted as a proxy for the extent of impacts is far too simplistic as Adani proposes. Figure 4.10 of the EIS affirms much of the surrounding area is covered by exploration permits. Perusing the Project simply exacerbates the issues and causes increased costs, time and loss of amenity to Hughes.	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding the preference for a single rail corridor to protect GQAL is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W EMP - Rail). Comments regarding the impact of the mine on GQAL have been noted. The mine plan has been developed to minimise the impact of the Project (Mine) on GQAL. Relevant mitigation and management measures have been outlined where relevant into the Project (Mine) draft EMP and the draft Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix Q1 and R1, respectively).
44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	Land	Good Quality Agricultural Land	In addition, coal dust from the rail will impact upon the air, grass and water which Hughes' operates the cattle grazing business. The coal dust will permeate the water from which Hughes and Hughes' cattle drink. In addition, the coal dust will coat the grasses that Hughes' cattle consume. Cattle will not consume grass which has been affected by air-borne particles, changing the taste. This will in turn have an adverse effect on the weight gains made by the cattle and the resulting cost that Hughes' is able to obtain for the cattle at market. [t may also result in an increase in the number of cattle losses (inadequate weight gain or coal dust toxins found in the air/water/grass). Hughes' will also be subject to a reduction in the quality of the air, water and ambiance that existed previously to the proposed Project. Impacts also include noise pollution and vibration from the mine/rail line.		Vol 3, Section 4	Comments regarding coal dust impacts on grazing activities have been noted. The air quality assessment conducted during the EIS concluded that air quality objectives of the EPP(Air) will be met. Further, a study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust. There is no evidence to support a claim that cattle will not feed on pastures affected by air-borne particles. A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
44	Emanate on behalf of Hughes (Wentworth Lot 2, Crown Plan DC184)	General comment	General comment	Hughes will be adversely affected by the proposed railway line running directly through Wentworth namely through: • Loss of Vegetation/Good Quality Agricultural Land • Loss of Stock Routes/I ncreased Management Costs • Flooding and Hydraulics Impacts • Unacceptable Cumulative Impacts including adverse impacts on threatened Biodiversity. Hughes' position is that Adani have proposed an open-cut and underground coal mine and railway line that in its present form has unacceptable impacts for landowners and communities because of the disruption it causes to cattle operations and the local environs. Due to the long term and irreversible impacts that the Project will have on Hughes, Hughes' business and the environment the application for the Project should be refused.		n/a	Comments are noted. Responses to specific comment are provided herein.
45	Emanate on behalf of Wilkinson (Cassiopeia)	Land	Stock routes	The EIS does not give sufficient weight to the importance of the Stock Route Network (SRN) nor does the EIS provide sufficient detail as to whether alternatives were considered to avoid the loss of SRN. Instead Adani states the alternatives are limited by suggesting that the loss is inevitable due to the open mine plan or subsidence from underground mining rather than seeking to modify its mine plan.	Accordingly Wilkinson submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Wilkinson) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Wilkinson's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments regarding the stock route have been noted. There will be no of SRN resulting from the Project, with impacts being limited to realignment and implementation of management at SRN interfaces with the Project. The realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders. Refer to SEIS Volume 4, Appendix G Section 2.3.3 commitment M3.30.

45	Emanate on behalf of Wilkinson (Cassiopeia)	Land	Stock routes	To be clear, the SRN is primarily used by the pastoral industry as an alternative to transporting stock by rail or road, and for pasture for emergency agistment and long-term grazing. It is used by utility companies to provide power lines, pipelines and telecommunications; and by the community generally for road transport, and recreational and other purposes such as beekeeping. The Queensland SRN is a highly valued land management tool in respect of its environmental and iconic cultural heritage values, which are recognised nationally as being of significance. Recent droughts have also established the importance of management arrangements for the SRN as the stock route network during times of drought accrues has accrued in greater significance for example in 2002-03. The pattern of stock route use remains one of periodic grazing; relatively short, infrequent periods of intense grazing interspersed with long periods of light or no grazing. Stock cannot walk the stock routes unless both pasture and water are present.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
45	Emanate on behalf of Wilkinson (Cassiopeia)	Land	Stock routes	The EIS does not address nor does it consider the significance of a loss of the SRN (whether on a long term or temporary basis) as to impacts on the business of landholders who use the stock routes (or may in the future) including: • Cultural and historical values associated with SRN activities such as sites of stock route facilities; family and personal connections to certain stock routes for both indigenous and non-indigenous peoples; and intrinsic cultural values associated with the simple existence of the stock route network and its linkage to exploration and settlement. • Economic values associated with providing employment to drovers and providing more economical alternatives for moving stock. The increased costs as a result of having to relocate stock routes including increased management costs to Wilkinson. Environmental values associated with the benefits to the environment from walking stock routes as opposed to trucking or transporting by rail (e.g. reduced emissions). • Social values associated with employment opportunities in the droving and pastoral industries as well as local governments.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
45	Emanate on behalf of Wilkinson (Cassiopeia)	Cumulative impacts	Biodiversity loss	At page 8-22 of the EIS chapter in respect of cumulative impacts Adani states: Given the presence and prevalence of the black-throated finch (southern) in the Project Area, and given mining activity is expected to remove and extensively degrade large tracts of habitat for this endangered species, the Project has the potential to significantly impact upon this subspecies if mitigation is not provided. As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. The black-throated finch has the potential to be cumulatively impacted by other projects in the Study Area. There is potential habitat within the Alpha Coal Project, Galilee Coal (Northern Export Facility) and Kevin's Comer Project to be removed. This increased pressure on black-throated finch habitat in the Study Area is likely to exacerbate the potential significant impact from the Project.	Wilkinson's position is: A Project approval would be inconsistent with the Honourable Tony Burke Minister for Sustainability, Environment, Water, Population and Communities approval of 23 August 2012, in respect of the Alpha Coal mine and rail Project approved which conditioned the approval on the basis that: o the proponent (GVK Hancock) established a trust, with initial funding of $2 million, to conduct research on the black-throated finch and the squatter pigeon, with provision for a more strategic approach to protect all key species in the Galilee Basin in the event that any further mines are approved in the Galilee Basin	Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
45	Emanate on behalf of Wilkinson (Cassiopeia)	Cumulative impacts	Biodiversity loss	Accordingly the present Project if approved would add to further pressure on an endangered species of the Galilee Basin (e.g. Black-Throated Finch) at time when strategic approach to protection has yet to be endorsed or considered by State and Federal Governments.		Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
45	Emanate on behalf of Wilkinson (Cassiopeia)	Cumulative impacts	Biodiversity loss	It is neither adequate nor sufficient for a Project of the scale proposed by Adani to not provide an alternative solution in respect of loss of biodiversity other than stating at Section 8-22: *The Project will be required to provide offsets in accordance with Commonwealth and State policies for these unavoidable impacts on habitat.* No reasonable measure has been provided in the EIS to address this fundamental issue.		Volume 1, Section 8.3.2.1, page 8-22	Adani has taken all measure to minimise impacts on biodiversity through appropriate sighting of infrastructure, design, mitigation measures and consideration of existing ecology. Similarly to other mining projects, residual impacts are unavoidable hence the need to offset. For further information on the mitigation measures to reduce impacts on biodiversity please refer to SEIS Volume 4, Appendix J1 for the revised Mine Ecology Report. and EIS Volume 4 Appendix AA Rail Ecology Report.

45	Emanate on behalf of Wilkinson (Cassiopeia)	Cumulative impacts	Biodiversity loss	The EIS should be refused on this ground as the EIS has not had proper regard to the object as set out in section 3 and section 223 of the EPA, as: • The Project fails to protect Queensland's environment whilst simultaneously permitting development seeking to improve the quality of life now and into the future which would maintain ecological processes on which life depends.	• The Project is not consistent with the principles of ecologically sustainable development as: o Long and short term economic, environmental, social and equity considerations must be effectively integrated in the decision making process. o Threats of serious or irreversible environmental damage or a deficient outcome in respect of an environmental investigation is insufficient grounds to delay measures to prevent environmental degradation. o The rail (and mine) will cause serious environmental harm (i.e. dust, noise and vibration) to the character and values of the Land as a result of inter alia coal dust. This is not in the public interest. o The employment, royalties and other benefits that the minelrail will generate must be balanced against the impact on Dennis' land and cattle grazing operations together with the impact on the biodiversity and environment. The outcome must be balanced in favour of public interest or consistent with the EPA.	Volume 1, Section 8.3.2.1, page 8-22	The Carmichael Coal Mine and Rail Project EIS and SEIS has been prepared in accordance with the ToR issued for the project. The EIS for the project has considered environmental, economic and social impacts and benefits. The EIS for the project has considered alternatives to the project and cumulative impacts. The project design and operating parameters have considered short, medium and long term requirements. Potential impacts have been addressed through the avoidance, mitigation and offset hierarchy, This hierarchy is endorsed by both the Federal and State governments and has been applied to similar projects in the same region. The project EIS did not conclude that serious environmental and hence social impacts will be caused as a result of coal dust. The project EIS was considered over local, regional and State areas. Public interest for the EIS was sought and the SEIS has been prepared in accordance with that public interest. Further supporting detail can be found in Volumes 1 through 4 of the SEIS.
45	Emanate on behalf of Wilkinson (Cassiopeia)	Climate, Natural Hazards and Climate Change	Flooding	The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five (5) years so the cumulative impact of geomorphic changes from diversions and other infrastructure will be additional.		Vol 3, Section 6.1.3.1, page 6-24	Comments regarding the cumulative impacts of the Project (Rail) on land form changes have been noted. Assessment of cumulative geomorphic changes are discussed in SEIS Volume 1 Section 8 Cumulative Impacts.
45	Emanate on behalf of Wilkinson (Cassiopeia)	Climate, Natural Hazards and Climate Change	Flooding	The Belyando River can be 30-40 kilometres (km) wide in big flood events. The floodplains within the study area are generally used for grazing beef cattle which is of interest to Wilkinson being a cattle grazier. The modelling conducted for the EIS is insufficient to establish the true extent of flooding that may arise as the information about the Project development (concept design), for example the Project (Rail) is unable to specify bridge lengths. As such, the magnitude of any afflux, and its impacts on farm roads and other flood plain assets relevant to Wilkinson, is only defined as a range (Volume 3, Section 6.1). On this basis, Adani admits it requires further subsequent modelling once the concept design has been advanced and that cumulative interactions will be taken into account at this stage and it is expected that a design solution can be developed that will avoid significant exacerbation of afflux or flooding extent.	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that Wilkinson can understand the impacts of the Project in terms of flooding on Wilkinson's business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to Wilkinson and Wilkinson's cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken (including bridge spans) and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
45	Emanate on behalf of Wilkinson (Cassiopeia)	Climate, Natural Hazards and Climate Change	Flooding	Further Adani then states that in general, there is no defined acceptance criterion for afflux caused by railways that applies uniformly to all projects. Achieving a zero afflux outcome is impractical and, normally, the final result is in Adani terms a compromise [at 6-26 Carmichael Coal Mine and Rail Project].		Vol 3, Section 6.1.3.1	The comments on known flood risk is noted. Detailed flood modelling has been undertaken and has been included in the Rail Flood Modelling Report (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
45	Emanate on behalf of Wilkinson (Cassiopeia)	Climate, Natural Hazards and Climate Change	Flooding	To be clear: The landscape traversed by the rail corridor is characterised by relatively flat floodplains dominated by rivers and creeks which have reasonably well defined channels lying within wider floodplains that are inundated during flood events. Adani's Environmental Management Plan premise for mitigation provides that some level of flooding will have to be accepted by landholders as part of the approval. This comes at a significant cost to Wilkinson and results in a monetary loss directly caused by the Project.	Wilkinson's position is: • The Project will impact of a number of cattle and grain producing businesses including Wilkinson. • Landholders (Wilkinson) each of presently have to deal with arrange of natural flood events which are only going to be further exasperated by poorly managed development options, including multiple mines and rail corridors in close proximity to each other. • As evidenced by cumulative risk raking provided by Adani, the significance of flooding is severely underestimated by reference to the Project Hazard and Risk Assessment Volume 3 Section 12 as flooding not ranked even high. • The Project will have similar effects to the already approved GVK- Hancock Alpha project and in combination will add to the effects these developments will have on the highly productive flood plains of the upper Belyando and Suttor Rivers. • The Project must be conditioned to provide maximum benefit for future development in both mining and agriculture and not just to Adani's preferred cost benefit scenario.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken and has been included in the Rail Flood Modelling Report (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
45	Emanate on behalf of Wilkinson (Cassiopeia)	Land	Good Quality Agricultural Land	The Queensland Government recognises that Good Quality Agricu[tural Land (GQAL) is a finite resource as are outlined in the State Planning Policy (SPP) 1/92 Development and Conservation of Good Quality Agricultural Land. Using the area of land currently being mined/impacted as a proxy for the extent of impacts is far too simplistic as Adani proposes. Figure 4.10 of the EIS affirms much of the surrounding area is covered by exploration permits. Perusing the Project simply exacerbates the issues and causes increased costs, time and loss of amenity to Wilkinson.	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding the preference for a single rail corridor to protect GQAL is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W EMP - Rail). Comments regarding the impact of the mine on GQAL have been noted. The mine plan has been developed to minimise the impact of the Project (Mine) on GQAL. Relevant mitigation and management measures have been outlined where relevant into the Project (Mine) draft EMP and the draft Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix Q1 and R1, respectively).

45	Emanate on behalf of Wilkinson (Cassiopeia)	Land	Good Quality Agricultural Land	In addition, coal dust from the rail will impact upon the air, grass and water which Wilkinson operates the cattle grazing business. The coal dust will permeate the water from which Wilkinson and Wilkinson's cattle drink. In addition, the coal dust will coat the grasses that Wilkinson's cattle consume. Cattle will not consume grass which has been affected by air-borne particles, changing the taste. This will in turn have an adverse effect on the weight gains made by the cattle and the resulting cost that Wilkinson is able to obtain for the cattle at market. It may also result in an increase in the number of cattle losses (inadequate weight gain or coal dust toxins found in the air/water/grass). Wilkinson will also be subject to a reduction in the quality of the air, water and ambiance that existed previously to the proposed Project. Impacts also include noise pollution and vibration from the mine/rail line.		Vol 3, Section 4	Comments regarding coal dust impacts on grazing activities have been noted. The air quality assessment conducted during the EIS concluded that air quality objectives of the EPP(Air) will be met. Further, a study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust. There is no evidence to support a claim that cattle will not feed on pastures affected by air-borne particles. A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
45	Emanate on behalf of Wilkinson (Cassiopeia)	General comment	General comment	Wilkinson will be adversely affected by the proposed railway line running directly through Cassiopeia namely through: • Loss of Vegetation/Good Quality Agricultural Land • Loss of Stock Routes/I ncreased Management Costs • Flooding and Hydraulics Impacts • Unacceptable Cumulative Impacts including adverse impacts on threatened Biodiversity. Wilkinson's position is that Adani have proposed an open-cut and underground coal mine and railway line that in its present form has unacceptable impacts for landowners and communities because of the disruption it causes to cattle operations and the local environs. Due to the long term and irreversible impacts that the Project will have on Wilkinson, Wilkinson's business and the environment the application for the Project should be refused.		n/a	Comments are noted. Responses to specific comment are provided herein.
46	Emanate on behalf of Dennis (Old Twin Hills)	Land	Stock routes	The EIS does not give sufficient weight to the importance of the Stock Route Network (SRN) nor does the EIS provide sufficient detail as to whether alternatives were considered to avoid the loss of SRN. Instead Adani states the alternatives are limited by suggesting that the loss is inevitable due to the open mine plan or subsidence from underground mining rather than seeking to modify its mine plan.	Accordingly Dennis submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Dennis) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Dennis's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments regarding the stock route have been noted. There will be no of SRN resulting from the Project, with impacts being limited to realignment and implementation of management at SRN interfaces with the Project. The realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders. Refer to SEIS Volume 4, Appendix G Section 2.3.3 commitment M3.30.
46	Emanate on behalf of Dennis (Old Twin Hills)	Land	Stock routes	To be clear, the SRN is primarily used by the pastoral industry as an alternative to transporting stock by rail or road, and for pasture for emergency agistment and long-term grazing. It is used by utility companies to provide power lines, pipelines and telecommunications; and by the community generally for road transport, and recreational and other purposes such as beekeeping. The Queensland SRN is a highly valued land management tool in respect of its environmental and iconic cultural heritage values, which are recognised nationally as being of significance. Recent droughts have also established the importance of management arrangements for the SRN as the stock route network during times of drought accrues has accrued in greater significance for example in 2002-03. The pattern of stock route use remains one of periodic grazing; relatively short, infrequent periods of intense grazing interspersed with long periods of light or no grazing. Stock cannot walk the stock routes unless both pasture and water are present.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
46	Emanate on behalf of Dennis (Old Twin Hills)	Land	Stock routes	The EIS does not address nor does it consider the significance of a loss of the SRN (whether on a long term or temporary basis) as to impacts on the business of landholders who use the stock routes (or may in the future) including: • Cultural and historical values associated with SRN activities such as sites of stock route facilities; family and personal connections to certain stock routes for both indigenous and non-indigenous peoples; and intrinsic cultural values associated with the simple existence of the stock route network and its linkage to exploration and settlement. • Economic values associated with providing employment to drovers and providing more economical alternatives for moving stock. The increased costs as a result of having to relocate stock routes including increased management costs to Dennis. Environmental values associated with the benefits to the environment from walking stock routes as opposed to trucking or transporting by rail (e.g. reduced emissions). • Social values associated with employment opportunities in the droving and pastoral industries as well as local governments.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.

46	Emanate on behalf of Dennis (Old Twin Hills)	Cumulative impacts	Black-Throated Finch	At page 8-22 of the EIS chapter in respect of cumulative impacts Adani states: Given the presence and prevalence of the black-throated finch (southern) in the Project Area, and given mining activity is expected to remove and extensively degrade large tracts of habitat for this endangered species, the Project has the potential to significantly impact upon this subspecies if mitigation is not provided. As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. The black-throated finch has the potential to be cumulatively impacted by other projects in the Study Area. There is potential habitat within the Alpha Coal Project, Galilee Coal (Northern Export Facility) and Kevin's Comer Project to be removed. This increased pressure on black-throated finch habitat in the Study Area is likely to exacerbate the potential significant impact from the Project.	Dennis's position is: A Project approval would be inconsistent with the Honourable Tony Burke Minister for Sustainability, Environment, Water, Population and Communities approval of 23 August 2012, in respect of the Alpha Coal mine and rail Project approved which conditioned the approval on the basis that: o the proponent (GVK Hancock) established a trust, with initial funding of $2 million, to conduct research on the black-throated finch and the squatter pigeon, with provision for a more strategic approach to protect all key species in the Galilee Basin in the event that any further mines are approved in the Galilee Basin	Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
46	Emanate on behalf of Dennis (Old Twin Hills)	Cumulative impacts	Black-Throated Finch	Accordingly the present Project if approved would add to further pressure on an endangered species of the Galilee Basin (e.g. Black-Throated Finch) at time when strategic approach to protection has yet to be endorsed or considered by State and Federal Governments.		Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
46	Emanate on behalf of Dennis (Old Twin Hills)	Cumulative impacts	Biodiversity loss	It is neither adequate nor sufficient for a Project of the scale proposed by Adani to not provide an alternative solution in respect of loss of biodiversity other than stating at Section 8-22: *The Project will be required to provide offsets in accordance with Commonwealth and State policies for these unavoidable impacts on habitat.* No reasonable measure has been provided in the EIS to address this fundamental issue.		Volume 1, Section 8.3.2.1, page 8-22	Adani has taken all measure to minimise impacts on biodiversity through appropriate sighting of infrastructure, design, mitigation measures and consideration of existing ecology. Similarly to other mining projects, residual impacts are unavoidable hence the need to offset. For further information on the mitigation measures to reduce impacts on biodiversity please refer to SEIS Volume 4, Appendix J1 for the revised Mine Ecology Report. and EIS Volume 4 Appendix AA Rail Ecology Report.
46	Emanate on behalf of Dennis (Old Twin Hills)	Cumulative impacts	Ecological Sustainable Development	The EIS should be refused on this ground as the EIS has not had proper regard to the object as set out in section 3 and section 223 of the EPA, as: • The Project fails to protect Queensland's environment whilst simultaneously permitting development seeking to improve the quality of life now and into the future which would maintain ecological processes on which life depends.	• The Project is not consistent with the principles of ecologically sustainable development as: o Long and short term economic, environmental, social and equity considerations must be effectively integrated in the decision making process. o Threats of serious or irreversible environmental damage or a deficient outcome in respect of an environmental investigation is insufficient grounds to delay measures to prevent environmental degradation. o The rail (and mine) will cause serious environmental harm (i.e. dust, noise and vibration) to the character and values of the Land as a result of inter alia coal dust. This is not in the public interest. o The employment, royalties and other benefits that the minelrail will generate must be balanced against the impact on Dennis' land and cattle grazing operations together with the impact on the biodiversity and environment. The outcome must be balanced in favour of public interest or consistent with the EPA.	Volume 1, Section 8.3.2.1, page 8-22	The Carmichael Coal Mine and Rail Project EIS and SEIS has been prepared in accordance with the ToR issued for the project. The EIS for the project has considered environmental, economic and social impacts and benefits. The EIS for the project has considered alternatives to the project and cumulative impacts. The project design and operating parameters have considered short, medium and long term requirements. Potential impacts have been addressed through the avoidance, mitigation and offset hierarchy, This hierarchy is endorsed by both the Federal and State governments and has been applied to similar projects in the same region. The project EIS did not conclude that serious environmental and hence social impacts will be caused as a result of coal dust. The project EIS was considered over local, regional and State areas. Public interest for the EIS was sought and the SEIS has been prepared in accordance with that public interest. Further supporting detail can be found in Volumes 1 through 4 of the SEIS.
46	Emanate on behalf of Dennis (Old Twin Hills)	Climate, Natural Hazards and Climate Change	Flooding	*Preliminary modelling indicated the extent of the inundation in the Belyando River and Mistake Creek compared with the 2008 Cyclone Helen inundation which was a 100 year ARI storm event.* The 2008 flood event was not the highest on record. Elgin Downs historical data indicates 3 April 1958 was one of the highest. 1954 and 1974 were also two major flood events which were higher than 2008. Landsat images for flood maps for 1983, 2008 and 2011 were not taken at the peak of the floods so inundation would have been greater than indicated on these maps.		Vol 3, Section 3.3.2.2 Vol 4, App AB (Rail Hydrology)	Comments regarding historic flood levels have been noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
46	Emanate on behalf of Dennis (Old Twin Hills)	Climate, Natural Hazards and Climate Change	Flooding	The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five (5) years so the cumulative impact of geomorphic changes from diversions and other infrastructure will be additional.		Vol 3, Section 6.1.3.1, page 6-24	Comments regarding the cumulative impacts of the Project on land form changes have been noted. Assessment of cumulative geomorphic changes are discussed in SEIS Volume 1 Section 8 Cumulative Impacts.
46	Emanate on behalf of Dennis (Old Twin Hills)	Climate, Natural Hazards and Climate Change	Flooding	The Belyando River can be 30-40 kilometres (km) wide in big flood events. The floodplains within the study area are generally used for grazing beef cattle which is of interest to Dennis being a cattle grazier. The modelling conducted for the EIS is insufficient to establish the true extent of flooding that may arise as the information about the Project development (concept design), for example the Project (Rail) is unable to specify bridge lengths. As such, the magnitude of any afflux, and its impacts on farm roads and other flood plain assets relevant to Dennis, is only defined as a range (Volume 3, Section 6.1). On this basis, Adani admits it requires further subsequent modelling once the concept design has been advanced and that cumulative interactions will be taken into account at this stage and it is expected that a design solution can be developed that will avoid significant exacerbation of afflux or flooding extent.	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that Dennis can understand the impacts of the Project in terms of flooding on Dennis's business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to Dennis and Dennis's cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken (including bridge spans) and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.

46	Emanate on behalf of Dennis (Old Twin Hills)	Climate, Natural Hazards and Climate Change	Flooding	Further Adani then states that in general, there is no defined acceptance criterion for afflux caused by railways that applies uniformly to all projects. Achieving a zero afflux outcome is impractical and, normally, the final result is in Adani terms a compromise [at 6-26 Carmichael Coal Mine and Rail Project].		Vol 3, Section 6.1.3.1	The comments on known flood risk is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
46	Emanate on behalf of Dennis (Old Twin Hills)	Climate, Natural Hazards and Climate Change	Flooding	To be clear: The landscape traversed by the rail corridor is characterised by relatively flat floodplains dominated by rivers and creeks which have reasonably well defined channels lying within wider floodplains that are inundated during flood events. Adani's Environmental Management Plan premise for mitigation provides that some level of flooding will have to be accepted by landholders as part of the approval. This comes at a significant cost to Dennis and results in a monetary loss directly caused by the Project.	Dennis's position is: • The Project will impact of a number of cattle and grain producing businesses including Dennis. • Landholders (Dennis) each of presently have to deal with arrange of natural flood events which are only going to be further exasperated by poorly managed development options, including multiple mines and rail corridors in close proximity to each other. • As evidenced by cumulative risk raking provided by Adani, the significance of flooding is severely underestimated by reference to the Project Hazard and Risk Assessment Volume 3 Section 12 as flooding not ranked even high. • The Project will have similar effects to the already approved GVK- Hancock Alpha project and in combination will add to the effects these developments will have on the highly productive flood plains of the upper Belyando and Suttor Rivers. • The Project must be conditioned to provide maximum benefit for future development in both mining and agriculture and not just to Adani's preferred cost benefit scenario.	Vol 3, Section 6.1.3.1; Section 12	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken and has been included in the Rail Flood Modelling Report (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
46	Emanate on behalf of Dennis (Old Twin Hills)	Land	Good Quality Agricultural Land	The Queensland Government recognises that Good Quality Agricultural Land (GQAL) is a finite resource as are outlined in the State Planning Policy (SPP) 1/92 Development and Conservation of Good Quality Agricultural Land. Using the area of land currently being mined/impacted as a proxy for the extent of impacts is far too simplistic as Adani proposes. Figure 4.10 of the EIS affirms much of the surrounding area is covered by exploration permits. Perusing the Project simply exacerbates the issues and causes increased costs, time and loss of amenity to Dennis.	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding the preference for a single rail corridor to protect GQAL is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W EMP - Rail). Comments regarding the impact of the mine on GQAL have been noted. The mine plan has been developed to minimise the impact of the Project (Mine) on GQAL. Relevant mitigation and management measures have been outlined where relevant into the Project (Mine) draft EMP and the draft Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix Q1 and R1, respectively).
46	Emanate on behalf of Dennis (Old Twin Hills)	Land	Coal dust management	In addition, coal dust from the rail will impact upon the air, grass and water which Dennis operates the cattle grazing business. The coal dust will permeate the water from which Dennis and Dennis's cattle drink. In addition, the coal dust will coat the grasses that Dennis's cattle consume. Cattle will not consume grass which has been affected by air-borne particles, changing the taste. This will in turn have an adverse effect on the weight gains made by the cattle and the resulting cost that Dennis is able to obtain for the cattle at market. It may also result in an increase in the number of cattle losses (inadequate weight gain or coal dust toxins found in the air/water/grass). Dennis will also be subject to a reduction in the quality of the air, water and ambiance that existed previously to the proposed Project. Impacts also include noise pollution and vibration from the mine/rail line.		Vol 3, Sections 4 and 7	Comments regarding coal dust impacts on grazing activities have been noted. The air quality assessment conducted during the EIS concluded that air quality objectives of the EPP(Air) will be met. Further, a study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust. There is no evidence to support a claim that cattle will not feed on pastures affected by air-borne particles. A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
46	Emanate on behalf of Dennis (Old Twin Hills)	Land	Soils and erosion	Dennis has been required been required by Government to prepare Environmental Risk Management Plan (ERMP) for Old Twin Hills pursuant to the *Environmental Protection Act 1994* for its grazing activities pursuant to *Great Barrier Reef Protection Amendment Act 2009* . The ERMP imposes penalties on a landholder (Dennis) for non-compliance with an approved ERMP. The purpose of an ERMP is to specify management actions that reduce the risk of sediment, fertiliser and chemicals leaving rural properties and entering the waters of the Great Barrier Reef. The rail line is going to severely impact on Dennis's ability to meet the criteria set down by the government. It is not clear if the Project approvals will require Adani to also operate in accordance with the same restrictions on Adani? The erosion and vegetation loss as a result of the rail line is definitely going to have an impact on the Great Barrier Reef catchment and environs.		Vol 3, Section 14.1.2	Ongoing consultation between land holders and Adani regarding specific management measures within ERMPs will be undertaken and where appropriate included within the draft EMP for the Project (Rail) (refer to SEIS Volume 4 Appendix W EMP - Rail). The commitment to consultation has been added to SEIS Volume 4, Appendix G Project Commitments Register.
46	Emanate on behalf of Dennis (Old Twin Hills)	Land	Land Use and tenure	At Section 4.12 Adani states the Project (Rail) alignment has been subject to multiple iterations based on feedback from landholders to optimise alignments and minimise impacts on properties. Wherever possible the alignment runs parallel to property boundaries in order to minimise severance of holdings and minimise impacts on property operations. Additional mitigation of impacts on individual property holdings will be managed directly with landholders as part of negotiation of compensation agreements. Dennis's experience is that the alignment will not minimise impact on Dennis's cattle operations.		Vol 3, Section 14.1.2	Comments regarding the severance of land parcels is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address impacts upon grazing activities (refer to SEIS Volume 4 Appendix W EMP - Rail). A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
46	Emanate on behalf of Dennis (Old Twin Hills)	Land	Stock routes	Carmichael Coal Mine and Rail Project Volume 3 Section 2 Rail Project Chapter Description At 2.3.3 Road and Stock Crossings Adani states: *Mistake Creek is also a stock crossing (stock route (U401 BEL Y02). Mistake Creek crossing is proposed to be grade separated with stock passing under the proposed rail bridge structure necessary for crossing the watercourse.* How are stock going to cross when the creek is running with a moderate flow?		Vol 3, Section 2.3.3	Comments regarding the stock route have been noted. Management of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, IRC and landholders. Refer to commitments under Section 2.2.3 of SEIS Volume 4 Appendix G.

46	Emanate on behalf of Dennis (Old Twin Hills)	Land	Land Use and tenure	A number of quarry and borrow locations have been identified for investigation as shown in Figure 2-7. Geotechnical investigations are underway to better determine the nature of the potential resource and the quantity of resource available. Twin Hills is included on this map. The Project must be conditioned to require that a significant local landmark to the Twin Hills community and should be preserved.		Vol 3, Section 2.6.3, Figure 2-7	Five quarry locations have been identified for use in the Project. These quarries are discuss in the detail in various Volume 4 appendices.
46	Emanate on behalf of Dennis (Old Twin Hills)	General comment	General comment	Dennis will be adversely affected by the proposed railway line running directly through Old Twin Hills namely through: • Loss of Vegetation/Good Quality Agricultural Land • Loss of Stock Routes/I ncreased Management Costs • Flooding and Hydraulics Impacts • Unacceptable Cumulative Impacts including adverse impacts on threatened Biodiversity. Dennis's position is that Adani have proposed an open-cut and underground coal mine and railway line that in its present form has unacceptable impacts for landowners and communities because of the disruption it causes to cattle operations and the local environs. Due to the long term and irreversible impacts that the Project will have on Dennis, Dennis's business and the environment the application for the Project should be refused.		n/a	Comments are noted. Responses to specific comment are provided herein.
47	Emanate on behalf of Elgin Downs	Land	Stock routes	The EIS does not give sufficient weight to the importance of the Stock Route Network (SRN) nor does the EIS provide sufficient detail as to whether alternatives were considered to avoid the loss of SRN. Instead Adani states the alternatives are limited by suggesting that the loss is inevitable due to the open mine plan or subsidence from underground mining rather than seeking to modify its mine plan.	Accordingly Elgin Downs submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Elgin Downs) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Elgin Downs's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments regarding the stock route have been noted. There will be no of SRN resulting from the Project, with impacts being limited to realignment and implementation of management at SRN interfaces with the Project. The realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders. Refer to SEIS Volume 4, Appendix G Section 2.3.3 commitment M3.30.
47	Emanate on behalf of Elgin Downs	Land	Stock routes	To be clear, the SRN is primarily used by the pastoral industry as an alternative to transporting stock by rail or road, and for pasture for emergency agistment and long-term grazing. It is used by utility companies to provide power lines, pipelines and telecommunications; and by the community generally for road transport, and recreational and other purposes such as beekeeping. The Queensland SRN is a highly valued land management tool in respect of its environmental and iconic cultural heritage values, which are recognised nationally as being of significance. Recent droughts have also established the importance of management arrangements for the SRN as the stock route network during times of drought accrues has accrued in greater significance for example in 2002-03. The pattern of stock route use remains one of periodic grazing; relatively short, infrequent periods of intense grazing interspersed with long periods of light or no grazing. Stock cannot walk the stock routes unless both pasture and water are present.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
47	Emanate on behalf of Elgin Downs	Land	Stock routes	The EIS does not address nor does it consider the significance of a loss of the SRN (whether on a long term or temporary basis) as to impacts on the business of landholders who use the stock routes (or may in the future) including: • Cultural and historical values associated with SRN activities such as sites of stock route facilities; family and personal connections to certain stock routes for both indigenous and non-indigenous peoples; and intrinsic cultural values associated with the simple existence of the stock route network and its linkage to exploration and settlement. • Economic values associated with providing employment to drovers and providing more economical alternatives for moving stock. The increased costs as a result of having to relocate stock routes including increased management costs to Elgin Downs. Environmental values associated with the benefits to the environment from walking stock routes as opposed to trucking or transporting by rail (e.g. reduced emissions). • Social values associated with employment opportunities in the droving and pastoral industries as well as local governments.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.

47	Emanate on behalf of Elgin Downs	Cumulative impacts	Biodiversity loss	At page 8-22 of the EIS chapter in respect of cumulative impacts Adani states: Given the presence and prevalence of the black-throated finch (southern) in the Project Area, and given mining activity is expected to remove and extensively degrade large tracts of habitat for this endangered species, the Project has the potential to significantly impact upon this subspecies if mitigation is not provided. As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. The black-throated finch has the potential to be cumulatively impacted by other projects in the Study Area. There is potential habitat within the Alpha Coal Project, Galilee Coal (Northern Export Facility) and Kevin's Comer Project to be removed. This increased pressure on black-throated finch habitat in the Study Area is likely to exacerbate the potential significant impact from the Project.	Elgin Downs' position is: A Project approval would be inconsistent with the Honourable Tony Burke Minister for Sustainability, Environment, Water, Population and Communities approval of 23 August 2012, in respect of the Alpha Coal mine and rail Project approved which conditioned the approval on the basis that: o the proponent (GVK Hancock) established a trust, with initial funding of $2 million, to conduct research on the black-throated finch and the squatter pigeon, with provision for a more strategic approach to protect all key species in the Galilee Basin in the event that any further mines are approved in the Galilee Basin	Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
47	Emanate on behalf of Elgin Downs	Cumulative impacts	Biodiversity loss	Accordingly the present Project if approved would add to further pressure on an endangered species of the Galilee Basin (e.g. Black-Throated Finch) at time when strategic approach to protection has yet to be endorsed or considered by State and Federal Governments.		Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
47	Emanate on behalf of Elgin Downs	Cumulative impacts	Biodiversity loss	It is neither adequate nor sufficient for a Project of the scale proposed by Adani to not provide an alternative solution in respect of loss of biodiversity other than stating at Section 8-22: *The Project will be required to provide offsets in accordance with Commonwealth and State policies for these unavoidable impacts on habitat.* No reasonable measure has been provided in the EIS to address this fundamental issue.		Volume 1, Section 8.3.2.1, page 8-22	Adani has taken all measure to minimise impacts on biodiversity through appropriate sighting of infrastructure, design, mitigation measures and consideration of existing ecology. Similarly to other mining projects, residual impacts are unavoidable hence the need to offset. For further information on the mitigation measures to reduce impacts on biodiversity please refer to SEIS Volume 4, Appendix J1 for the revised Mine Ecology Report. and EIS Volume 4 Appendix AA Rail Ecology Report.
47	Emanate on behalf of Elgin Downs	Cumulative impacts	Biodiversity loss	The EIS should be refused on this ground as the EIS has not had proper regard to the object as set out in section 3 and section 223 of the EPA, as: • The Project fails to protect Queensland's environment whilst simultaneously permitting development seeking to improve the quality of life now and into the future which would maintain ecological processes on which life depends.	• The Project is not consistent with the principles of ecologically sustainable development as: o Long and short term economic, environmental, social and equity considerations must be effectively integrated in the decision making process. o Threats of serious or irreversible environmental damage or a deficient outcome in respect of an environmental investigation is insufficient grounds to delay measures to prevent environmental degradation. o The rail (and mine) will cause serious environmental harm (i.e. dust, noise and vibration) to the character and values of the Land as a result of inter alia coal dust. This is not in the public interest. o The employment, royalties and other benefits that the minelrail will generate must be balanced against the impact on Elgin Downs' land and cattle grazing operations together with the impact on the biodiversity and environment. The outcome must be balanced in favour of public interest or consistent with the EPA.	Volume 1, Section 8.3.2.1, page 8-22	The Carmichael Coal Mine and Rail Project EIS and SEIS has been prepared in accordance with the ToR issued for the project. The EIS for the project has considered environmental, economic and social impacts and benefits. The EIS for the project has considered alternatives to the project and cumulative impacts. The project design and operating parameters have considered short, medium and long term requirements. Potential impacts have been addressed through the avoidance, mitigation and offset hierarchy, This hierarchy is endorsed by both the Federal and State governments and has been applied to similar projects in the same region. The project EIS did not conclude that serious environmental and hence social impacts will be caused as a result of coal dust. The project EIS was considered over local, regional and State areas. Public interest for the EIS was sought and the SEIS has been prepared in accordance with that public interest. Further supporting detail can be found in Volumes 1 through 4 of the SEIS.
47	Emanate on behalf of Elgin Downs	Climate, Natural Hazards and Climate Change	Flooding	*Preliminary modelling indicated the extent of the inundation in the Belyando River and Mistake Creek compared with the 2008 Cyclone Helen inundation which was a 100 year ARI storm event.* The 2008 flood event was not the highest on record. Elgin Downs historical data indicates 3 April 1958 was one of the highest. 1954 and 1974 were also two major flood events which were higher than 2008. Landsat images for flood maps for 1983, 2008 and 2011 were not taken at the peak of the floods so inundation would have been greater than indicated on these maps.		Vol 3, Section 3.3.2.2 Vol 4, App AB (Rail Hydrology)	Comments regarding historic flood levels have been noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
47	Emanate on behalf of Elgin Downs	Climate, Natural Hazards and Climate Change	Flooding	The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five (5) years so the cumulative impact of geomorphic changes from diversions and other infrastructure will be additional.		Vol 3, Section 6.1.3.1, page 6-24	Comments regarding the cumulative impacts of the Project on land form changes have been noted. Assessment of cumulative geomorphic changes are discussed in SEIS Volume 1 Section 8 Cumulative Impacts.
47	Emanate on behalf of Elgin Downs	Climate, Natural Hazards and Climate Change	Flooding	The Belyando River can be 30-40 kilometres (km) wide in big flood events. The floodplains within the study area are generally used for grazing beef cattle which is of interest to Elgin Downs being a cattle grazier. The modelling conducted for the EIS is insufficient to establish the true extent of flooding that may arise as the information about the Project development (concept design), for example the Project (Rail) is unable to specify bridge lengths. As such, the magnitude of any afflux, and its impacts on farm roads and other flood plain assets relevant to Elgin Downs, is only defined as a range (Volume 3, Section 6.1). On this basis, Adani admits it requires further subsequent modelling once the concept design has been advanced and that cumulative interactions will be taken into account at this stage and it is expected that a design solution can be developed that will avoid significant exacerbation of afflux or flooding extent.	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that Elgin Downs can understand the impacts of the Project in terms of flooding on Elgin Downs's business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to Elgin Downs and Elgin Downs's cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken (including bridge spans) and has been included in the Rail Flood Modelling Report (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.

47	Emanate on behalf of Elgin Downs	Climate, Natural Hazards and Climate Change	Flooding	Further Adani then states that in general, there is no defined acceptance criterion for afflux caused by railways that applies uniformly to all projects. Achieving a zero afflux outcome is impractical and, normally, the final result is in Adani terms a compromise [at 6-26 Carmichael Coal Mine and Rail Project].		Vol 3, Section 6.1.3.1	The comments on known flood risk is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
47	Emanate on behalf of Elgin Downs	Climate, Natural Hazards and Climate Change	Flooding	To be clear: The landscape traversed by the rail corridor is characterised by relatively flat floodplains dominated by rivers and creeks which have reasonably well defined channels lying within wider floodplains that are inundated during flood events. Adani's Environmental Management Plan premise for mitigation provides that some level of flooding will have to be accepted by landholders as part of the approval. This comes at a significant cost to Elgin Downs and results in a monetary loss directly caused by the Project.	Elgin Downs's position is: • The Project will impact of a number of cattle and grain producing businesses including Elgin Downs. • Landholders (Elgin Downs) each of presently have to deal with arrange of natural flood events which are only going to be further exasperated by poorly managed development options, including multiple mines and rail corridors in close proximity to each other. • As evidenced by cumulative risk raking provided by Adani, the significance of flooding is severely underestimated by reference to the Project Hazard and Risk Assessment Volume 3 Section 12 as flooding not ranked even high. • The Project will have similar effects to the already approved GVK- Hancock Alpha project and in combination will add to the effects these developments will have on the highly productive flood plains of the upper Belyando and Suttor Rivers. • The Project must be conditioned to provide maximum benefit for future development in both mining and agriculture and not just to Adani's preferred cost benefit scenario.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
47	Emanate on behalf of Elgin Downs	Land	Good Quality Agricultural Land	The Queensland Government recognises that Good Quality Agricu[tural Land (GQAL) is a finite resource as are outlined in the State Planning Policy (SPP) 1/92 Development and Conservation of Good Quality Agricultural Land. Using the area of land currently being mined/impacted as a proxy for the extent of impacts is far too simplistic as Adani proposes. Figure 4.10 of the EIS affirms much of the surrounding area is covered by exploration permits. Perusing the Project simply exacerbates the issues and causes increased costs, time and loss of amenity to Elgin Downs.	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding the preference for a single rail corridor to protect GQAL is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W EMP - Rail). Comments regarding the impact of the mine on GQAL have been noted. The mine plan has been developed to minimise the impact of the Project (Mine) on GQAL. Relevant mitigation and management measures have been outlined where relevant into the Project (Mine) draft EMP and the draft Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix Q1 and R1, respectively).
47	Emanate on behalf of Elgin Downs	Land	Good Quality Agricultural Land	In addition, coal dust from the rail will impact upon the air, grass and water which Elgin Downs operates the cattle grazing business. The coal dust will permeate the water from which Elgin Downs and Elgin Downs's cattle drink. In addition, the coal dust will coat the grasses that Elgin Downs's cattle consume. Cattle will not consume grass which has been affected by air-borne particles, changing the taste. This will in turn have an adverse effect on the weight gains made by the cattle and the resulting cost that Elgin Downs is able to obtain for the cattle at market. It may also result in an increase in the number of cattle losses (inadequate weight gain or coal dust toxins found in the air/water/grass). Elgin Downs will also be subject to a reduction in the quality of the air, water and ambiance that existed previously to the proposed Project. Impacts also include noise pollution and vibration from the mine/rail line.		Vol 3, Section 4	Comments regarding coal dust impacts on grazing activities have been noted. The air quality assessment conducted during the EIS concluded that air quality objectives of the EPP(Air) will be met. Further, a study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust. There is no evidence to support a claim that cattle will not feed on pastures affected by air-borne particles. A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
47	Emanate on behalf of Elgin Downs	Land	Soils and erosion	Elgin Downs has been required been required by Government to prepare Environmental Risk Management Plan (ERMP) for Elgin Downs pursuant to the Environmental Protection Act 1994 for its grazing activities pursuant to Great Barrier Reef Protection Amendment Act 2009. The ERMP imposes penalties on a landholder (Elgin Downs) for non-compliance with an approved ERMP. The purpose of an ERMP is to specify management actions that reduce the risk of sediment, fertiliser and chemicals leaving rural properties and entering the waters of the Great Barrier Reef. The rail line is going to severely impact on Elgin Downs's ability to meet the criteria set down by the government. It is not clear if the Project approvals will require Adani to also operate in accordance with the same restrictions on Adani? The erosion and vegetation loss as a result of the rail line is definitely going to have an impact on the Great Barrier Reef catchment and environs.		Vol 3, Seciton 14.1.2	Ongoing consultation between land holders and Adani regarding specific management measures within ERMPs will be undertaken and where appropriate included within the draft EMP for the Project (Rail) (refer to SEIS Volume 4 Appendix W EMP - Rail). The commitment to consultation has been added to SEIS Volume 4, Appendix G Project Commitments Register.
47	Emanate on behalf of Elgin Downs	Land	Land Use and tenure	At Section 4.12 Adani states the Project (Rail) alignment has been subject to multiple iterations based on feedback from landholders to optimise alignments and minimise impacts on properties. Wherever possible the alignment runs parallel to property boundaries in order to minimise severance of holdings and minimise impacts on property operations. Additional mitigation of impacts on individual property holdings will be managed directly with landholders as part of negotiation of compensation agreements. Elgin Downs's experience is that the alignment will not minimise impact on Elgin Downs's cattle operations.		Vol 3, Seciton 14.1.2	Comments regarding the severance of land parcels is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address impacts upon grazing activities (refer to SEIS Volume 4 Appendix W EMP - Rail). Further information on consultation with landholders regarding severance and flooding is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.

47	Emanate on behalf of Elgin Downs	Land	Stock routes	Carmichael Coal Mine and Rail Project Volume 3 Section 2 Rail Project Chapter Description At 2.3.3 Road and Stock Crossings Adani states: *Mistake Creek is also a stock crossing (stock route (U401 BEL Y02). Mistake Creek crossing is proposed to be grade separated with stock passing under the proposed rail bridge structure necessary for crossing the watercourse.* How are stock going to cross when the creek is running with a moderate flow?		Vol 3, Section 2.3.3	Comments regarding the stock route have been noted. Management of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, IRC and landholders. Refer to commitments under Section 2.2.3 of SEIS Volume 4 Appendix G.
47	Emanate on behalf of Elgin Downs	Land	Land Use and tenure	A number of quarry and borrow locations have been identified for investigation as shown in Figure 2-7. Geotechnical investigations are underway to better determine the nature of the potential resource and the quantity of resource available. Twin Hills is included on this map. The Project must be conditioned to require that a significant local landmark to the Twin Hills community and should be preserved.		Vol 3, Section 2.6.3, Figure 2-7	Noted. Information regarding quarry assessment is included in the SEIS Volume 4 C2 Quarry Approvals Documentation
47	Emanate on behalf of Elgin Downs	General comment	General comment	Elgin Downs will be adversely affected by the proposed railway line running directly through Elgin Downs namely through: • Loss of Vegetation/Good Quality Agricultural Land • Loss of Stock Routes/I ncreased Management Costs • Flooding and Hydraulics Impacts • Unacceptable Cumulative Impacts including adverse impacts on threatened Biodiversity. Elgin Downs's position is that Adani have proposed an open-cut and underground coal mine and railway line that in its present form has unacceptable impacts for landowners and communities because of the disruption it causes to cattle operations and the local environs. Due to the long term and irreversible impacts that the Project will have on Elgin Downs, Elgin Downs' business and the environment the application for the Project should be refused.		n/a	Comments are noted. Responses to specific comment are provided herein.
48	Emanate on behalf of Dennis (Goodawada)	Land	Stock routes	The EIS does not give sufficient weight to the importance of the Stock Route Network (SRN) nor does the EIS provide sufficient detail as to whether alternatives were considered to avoid the loss of SRN. Instead Adani states the alternatives are limited by suggesting that the loss is inevitable due to the open mine plan or subsidence from underground mining rather than seeking to modify its mine plan.	Accordingly Dennis submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Dennis) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Dennis's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments regarding the stock route have been noted. There will be no of SRN resulting from the Project, with impacts being limited to realignment and implementation of management at SRN interfaces with the Project. The realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders. Refer to SEIS Volume 4, Appendix G Section 2.3.3 commitment M3.30.
48	Emanate on behalf of Dennis (Goodawada)	Land	Stock routes	To be clear, the SRN is primarily used by the pastoral industry as an alternative to transporting stock by rail or road, and for pasture for emergency agistment and long-term grazing. It is used by utility companies to provide power lines, pipelines and telecommunications; and by the community generally for road transport, and recreational and other purposes such as beekeeping. The Queensland SRN is a highly valued land management tool in respect of its environmental and iconic cultural heritage values, which are recognised nationally as being of significance. Recent droughts have also established the importance of management arrangements for the SRN as the stock route network during times of drought accrues has accrued in greater significance for example in 2002-03. The pattern of stock route use remains one of periodic grazing; relatively short, infrequent periods of intense grazing interspersed with long periods of light or no grazing. Stock cannot walk the stock routes unless both pasture and water are present.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
48	Emanate on behalf of Dennis (Goodawada)	Land	Stock routes	The EIS does not address nor does it consider the significance of a loss of the SRN (whether on a long term or temporary basis) as to impacts on the business of landholders who use the stock routes (or may in the future) including: • Cultural and historical values associated with SRN activities such as sites of stock route facilities; family and personal connections to certain stock routes for both indigenous and non-indigenous peoples; and intrinsic cultural values associated with the simple existence of the stock route network and its linkage to exploration and settlement. • Economic values associated with providing employment to drovers and providing more economical alternatives for moving stock. The increased costs as a result of having to relocate stock routes including increased management costs to Dennis. Environmental values associated with the benefits to the environment from walking stock routes as opposed to trucking or transporting by rail (e.g. reduced emissions). • Social values associated with employment opportunities in the droving and pastoral industries as well as local governments.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.

48	Emanate on behalf of Dennis (Goodawada)	Cumulative impacts	Biodiversity loss	At page 8-22 of the EIS chapter in respect of cumulative impacts Adani states: Given the presence and prevalence of the black-throated finch (southern) in the Project Area, and given mining activity is expected to remove and extensively degrade large tracts of habitat for this endangered species, the Project has the potential to significantly impact upon this subspecies if mitigation is not provided. As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. The black-throated finch has the potential to be cumulatively impacted by other projects in the Study Area. There is potential habitat within the Alpha Coal Project, Galilee Coal (Northern Export Facility) and Kevin's Comer Project to be removed. This increased pressure on black-throated finch habitat in the Study Area is likely to exacerbate the potential significant impact from the Project.	Dennis' position is: A Project approval would be inconsistent with the Honourable Tony Burke Minister for Sustainability, Environment, Water, Population and Communities approval of 23 August 2012, in respect of the Alpha Coal mine and rail Project approved which conditioned the approval on the basis that: o the proponent (GVK Hancock) established a trust, with initial funding of $2 million, to conduct research on the black-throated finch and the squatter pigeon, with provision for a more strategic approach to protect all key species in the Galilee Basin in the event that any further mines are approved in the Galilee Basin	Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
48	Emanate on behalf of Dennis (Goodawada)	Cumulative impacts	Biodiversity loss	Accordingly the present Project if approved would add to further pressure on an endangered species of the Galilee Basin (e.g. Black-Throated Finch) at time when strategic approach to protection has yet to be endorsed or considered by State and Federal Governments.		Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
48	Emanate on behalf of Dennis (Goodawada)	Cumulative impacts	Biodiversity loss	It is neither adequate nor sufficient for a Project of the scale proposed by Adani to not provide an alternative solution in respect of loss of biodiversity other than stating at Section 8-22: *The Project will be required to provide offsets in accordance with Commonwealth and State policies for these unavoidable impacts on habitat.* No reasonable measure has been provided in the EIS to address this fundamental issue.		Volume 1, Section 8.3.2.1, page 8-22	Adani has taken all measure to minimise impacts on biodiversity through appropriate sighting of infrastructure, design, mitigation measures and consideration of existing ecology. Similarly to other mining projects, residual impacts are unavoidable hence the need to offset. For further information on the mitigation measures to reduce impacts on biodiversity please refer to SEIS Volume 4, Appendix J1 for the revised Mine Ecology Report. and EIS Volume 4 Appendix AA Rail Ecology Report.
48	Emanate on behalf of Dennis (Goodawada)	Cumulative impacts	Biodiversity loss	The EIS should be refused on this ground as the EIS has not had proper regard to the object as set out in section 3 and section 223 of the EPA, as: • The Project fails to protect Queensland's environment whilst simultaneously permitting development seeking to improve the quality of life now and into the future which would maintain ecological processes on which life depends.	• The Project is not consistent with the principles of ecologically sustainable development as: o Long and short term economic, environmental, social and equity considerations must be effectively integrated in the decision making process. o Threats of serious or irreversible environmental damage or a deficient outcome in respect of an environmental investigation is insufficient grounds to delay measures to prevent environmental degradation. o The rail (and mine) will cause serious environmental harm (i.e. dust, noise and vibration) to the character and values of the Land as a result of inter alia coal dust. This is not in the public interest. o The employment, royalties and other benefits that the minelrail will generate must be balanced against the impact on Dennis' land and cattle grazing operations together with the impact on the biodiversity and environment. The outcome must be balanced in favour of public interest or consistent with the EPA.	Volume 1, Section 8.3.2.1, page 8-22	The Carmichael Coal Mine and Rail Project EIS and SEIS has been prepared in accordance with the ToR issued for the project. The EIS for the project has considered environmental, economic and social impacts and benefits. The EIS for the project has considered alternatives to the project and cumulative impacts. The project design and operating parameters have considered short, medium and long term requirements. Potential impacts have been addressed through the avoidance, mitigation and offset hierarchy, This hierarchy is endorsed by both the Federal and State governments and has been applied to similar projects in the same region. The project EIS did not conclude that serious environmental and hence social impacts will be caused as a result of coal dust. The project EIS was considered over local, regional and State areas. Public interest for the EIS was sought and the SEIS has been prepared in accordance with that public interest. Further supporting detail can be found in Volumes 1 through 4 of the SEIS.
48	Emanate on behalf of Dennis (Goodawada)	Climate, Natural Hazards and Climate Change	Flooding	*Preliminary modelling indicated the extent of the inundation in the Belyando River and Mistake Creek compared with the 2008 Cyclone Helen inundation which was a 100 year ARI storm event.* The 2008 flood event was not the highest on record. Elgin Downs historical data indicates 3 April 1958 was one of the highest. 1954 and 1974 were also two major flood events which were higher than 2008. Landsat images for flood maps for 1983, 2008 and 2011 were not taken at the peak of the floods so inundation would have been greater than indicated on these maps.		Vol 3, Section 3.3.2.2 Vol 4, App AB (Rail Hydrology)	Comments regarding historic flood levels have been noted. Detailed flood modelling has been undertaken and has been included in the Rail Flood Modelling Report (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
48	Emanate on behalf of Dennis (Goodawada)	Climate, Natural Hazards and Climate Change	Flooding	The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five (5) years so the cumulative impact of geomorphic changes from diversions and other infrastructure will be additional.		Vol 3, Section 6.1.3.1, page 6-24	Comments regarding the cumulative impacts of the Project on land form changes have been noted. Assessment of cumulative geomorphic changes are discussed in SEIS Volume 1 Section 8 Cumulative Impacts.
48	Emanate on behalf of Dennis (Goodawada)	Climate, Natural Hazards and Climate Change	Flooding	The Belyando River can be 30-40 kilometres (km) wide in big flood events. The floodplains within the study area are generally used for grazing beef cattle which is of interest to Dennis being a cattle grazier. The modelling conducted for the EIS is insufficient to establish the true extent of flooding that may arise as the information about the Project development (concept design), for example the Project (Rail) is unable to specify bridge lengths. As such, the magnitude of any afflux, and its impacts on farm roads and other flood plain assets relevant to Dennis, is only defined as a range (Volume 3, Section 6.1). On this basis, Adani admits it requires further subsequent modelling once the concept design has been advanced and that cumulative interactions will be taken into account at this stage and it is expected that a design solution can be developed that will avoid significant exacerbation of afflux or flooding extent.	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that Dennis can understand the impacts of the Project in terms of flooding on Dennis's business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to Dennis and Dennis's cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken (including bridge spans) and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.

48	Emanate on behalf of Dennis (Goodawada)	Climate, Natural Hazards and Climate Change	Flooding	Further Adani then states that in general, there is no defined acceptance criterion for afflux caused by railways that applies uniformly to all projects. Achieving a zero afflux outcome is impractical and, normally, the final result is in Adani terms a compromise [at 6-26 Carmichael Coal Mine and Rail Project].		Vol 3, Section 6.1.3.1	The comments on known flood risk is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
48	Emanate on behalf of Dennis (Goodawada)	Climate, Natural Hazards and Climate Change	Flooding	To be clear: The landscape traversed by the rail corridor is characterised by relatively flat floodplains dominated by rivers and creeks which have reasonably well defined channels lying within wider floodplains that are inundated during flood events. Adani's Environmental Management Plan premise for mitigation provides that some level of flooding will have to be accepted by landholders as part of the approval. This comes at a significant cost to Dennis and results in a monetary loss directly caused by the Project.	Dennis's position is: • The Project will impact of a number of cattle and grain producing businesses including Dennis. • Landholders (Dennis) each of presently have to deal with arrange of natural flood events which are only going to be further exasperated by poorly managed development options, including multiple mines and rail corridors in close proximity to each other. • As evidenced by cumulative risk raking provided by Adani, the significance of flooding is severely underestimated by reference to the Project Hazard and Risk Assessment Volume 3 Section 12 as flooding not ranked even high. • The Project will have similar effects to the already approved GVK- Hancock Alpha project and in combination will add to the effects these developments will have on the highly productive flood plains of the upper Belyando and Suttor Rivers. • The Project must be conditioned to provide maximum benefit for future development in both mining and agriculture and not just to Adani's preferred cost benefit scenario.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
48	Emanate on behalf of Dennis (Goodawada)	Land	Good Quality Agricultural Land	The Queensland Government recognises that Good Quality Agricu[tural Land (GQAL) is a finite resource as are outlined in the State Planning Policy (SPP) 1/92 Development and Conservation of Good Quality Agricultural Land. Using the area of land currently being mined/impacted as a proxy for the extent of impacts is far too simplistic as Adani proposes. Figure 4.10 of the EIS affirms much of the surrounding area is covered by exploration permits. Perusing the Project simply exacerbates the issues and causes increased costs, time and loss of amenity to Dennis.	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding the preference for a single rail corridor to protect GQAL is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W EMP - Rail). Comments regarding the impact of the mine on GQAL have been noted. The mine plan has been developed to minimise the impact of the Project (Mine) on GQAL. Relevant mitigation and management measures have been outlined where relevant into the Project (Mine) draft EMP and the draft Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix Q1 and R1, respectively).
48	Emanate on behalf of Dennis (Goodawada)	Land	Good Quality Agricultural Land	In addition, coal dust from the rail will impact upon the air, grass and water which Dennis operates the cattle grazing business. The coal dust will permeate the water from which Dennis and Dennis's cattle drink. In addition, the coal dust will coat the grasses that Dennis's cattle consume. Cattle will not consume grass which has been affected by air-borne particles, changing the taste. This will in turn have an adverse effect on the weight gains made by the cattle and the resulting cost that Dennis is able to obtain for the cattle at market. It may also result in an increase in the number of cattle losses (inadequate weight gain or coal dust toxins found in the air/water/grass). Dennis will also be subject to a reduction in the quality of the air, water and ambiance that existed previously to the proposed Project. Impacts also include noise pollution and vibration from the mine/rail line.		Vol 3, Section 4	Comments regarding coal dust impacts on grazing activities have been noted. The air quality assessment conducted during the EIS concluded that air quality objectives of the EPP(Air) will be met. Further, a study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust. There is no evidence to support a claim that cattle will not feed on pastures affected by air-borne particles. A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
48	Emanate on behalf of Dennis (Goodawada)	Land	Soils and erosion	Dennis has been required been required by Government to prepare Environmental Risk Management Plan (ERMP) for Goodawada pursuant to the Environmental Protection Act 1994 for its grazing activities pursuant to Great Barrier Reef Protection Amendment Act 2009. The ERMP imposes penalties on a landholder (Dennis) for non-compliance with an approved ERMP. The purpose of an ERMP is to specify management actions that reduce the risk of sediment, fertiliser and chemicals leaving rural properties and entering the waters of the Great Barrier Reef. The rail line is going to severely impact on Dennis's ability to meet the criteria set down by the government. It is not clear if the Project approvals will require Adani to also operate in accordance with the same restrictions on Adani? The erosion and vegetation loss as a result of the rail line is definitely going to have an impact on the Great Barrier Reef catchment and environs.		Vol 3, Seciton 14.1.2	Ongoing consultation between land holders and Adani regarding specific management measures within ERMPs will be undertaken and where appropriate included within the draft EMP for the Project (Rail) (refer to SEIS Volume 4 Appendix W EMP - Rail). The commitment to consultation has been added to SEIS Volume 4, Appendix G Project Commitments Register. SIA and SIMP updated with details of landholder consultation, refer to SEIS Volume 4, Appendices D1 and D2.
48	Emanate on behalf of Dennis (Goodawada)	Land	Land Use and tenure	At Section 4.12 Adani states the Project (Rail) alignment has been subject to multiple iterations based on feedback from landholders to optimise alignments and minimise impacts on properties. Wherever possible the alignment runs parallel to property boundaries in order to minimise severance of holdings and minimise impacts on property operations. Additional mitigation of impacts on individual property holdings will be managed directly with landholders as part of negotiation of compensation agreements. Dennis's experience is that the alignment will not minimise impact on Dennis's cattle operations.		Vol 3, Seciton 14.1.2	Comments regarding the severance of land parcels is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address impacts upon grazing activities (refer to SEIS Volume 4 Appendix W EMP - Rail). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.

48	Emanate on behalf of Dennis (Goodawada)	Land	Stock routes	Carmichael Coal Mine and Rail Project Volume 3 Section 2 Rail Project Chapter Description At 2.3.3 Road and Stock Crossings Adani states: *Mistake Creek is also a stock crossing (stock route (U401 BEL Y02). Mistake Creek crossing is proposed to be grade separated with stock passing under the proposed rail bridge structure necessary for crossing the watercourse.* How are stock going to cross when the creek is running with a moderate flow?		Vol 3, Section 2.3.3	Comments regarding the stock route have been noted. Management of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, IRC and landholders. Refer to commitments under Section 2.2.3 of SEIS Volume 4 Appendix G.
48	Emanate on behalf of Dennis (Goodawada)	Land	Land Use and tenure	A number of quarry and borrow locations have been identified for investigation as shown in Figure 2-7. Geotechnical investigations are underway to better determine the nature of the potential resource and the quantity of resource available. Twin Hills is included on this map. The Project must be conditioned to require that a significant local landmark to the Twin Hills community and should be preserved.		Vol 3, Section 2.6.3, Figure 2-7	Information regarding the five quarries is contained within the SEIS Volume 4 Appendix C2 Quarry Approvals Documentation
48	Emanate on behalf of Dennis (Goodawada)	General comment	General comment	Dennis will be adversely affected by the proposed railway line running directly through Goodawada namely through: • Loss of Vegetation/Good Quality Agricultural Land • Loss of Stock Routes/I ncreased Management Costs • Flooding and Hydraulics Impacts • Unacceptable Cumulative Impacts including adverse impacts on threatened Biodiversity. Dennis's position is that Adani have proposed an open-cut and underground coal mine and railway line that in its present form has unacceptable impacts for landowners and communities because of the disruption it causes to cattle operations and the local environs. Due to the long term and irreversible impacts that the Project will have on Dennis, Dennis's business and the environment the application for the Project should be refused.		n/a	Comments are noted. Responses to specific comment are provided herein.
49	Emanate on behalf of New Twin Hills	Land	Stock routes	The EIS does not give sufficient weight to the importance of the Stock Route Network (SRN) nor does the EIS provide sufficient detail as to whether alternatives were considered to avoid the loss of SRN. Instead Adani states the alternatives are limited by suggesting that the loss is inevitable due to the open mine plan or subsidence from underground mining rather than seeking to modify its mine plan.	Accordingly New Twin Hills submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (New Twin Hills) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • New Twin Hills 's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments regarding the stock route have been noted. There will be no of SRN resulting from the Project, with impacts being limited to realignment and implementation of management at SRN interfaces with the Project. The realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders. Refer to SEIS Volume 4, Appendix G Section 2.3.3 commitment M3.30.
49	Emanate on behalf of New Twin Hills	Land	Stock routes	To be clear, the SRN is primarily used by the pastoral industry as an alternative to transporting stock by rail or road, and for pasture for emergency agistment and long-term grazing. It is used by utility companies to provide power lines, pipelines and telecommunications; and by the community generally for road transport, and recreational and other purposes such as beekeeping. The Queensland SRN is a highly valued land management tool in respect of its environmental and iconic cultural heritage values, which are recognised nationally as being of significance. Recent droughts have also established the importance of management arrangements for the SRN as the stock route network during times of drought accrues has accrued in greater significance for example in 2002-03. The pattern of stock route use remains one of periodic grazing; relatively short, infrequent periods of intense grazing interspersed with long periods of light or no grazing. Stock cannot walk the stock routes unless both pasture and water are present.	Accordingly New Twin Hills submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (New Twin Hills) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • New Twin Hills 's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
49	Emanate on behalf of New Twin Hills	Land	Stock routes	The EIS does not address nor does it consider the significance of a loss of the SRN (whether on a long term or temporary basis) as to impacts on the business of landholders who use the stock routes (or may in the future) including: • Cultural and historical values associated with SRN activities such as sites of stock route facilities; family and personal connections to certain stock routes for both indigenous and non-indigenous peoples; and intrinsic cultural values associated with the simple existence of the stock route network and its linkage to exploration and settlement. • Economic values associated with providing employment to drovers and providing more economical alternatives for moving stock. The increased costs as a result of having to relocate stock routes including increased management costs to New Twin Hills. Environmental values associated with the benefits to the environment from walking stock routes as opposed to trucking or transporting by rail (e.g. reduced emissions). • Social values associated with employment opportunities in the droving and pastoral industries as well as local governments.	Accordingly New Twin Hills submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (New Twin Hills) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • New Twin Hills 's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.

49	Emanate on behalf of New Twin Hills	Cumulative impacts	Biodiversity loss	At page 8-22 of the EIS chapter in respect of cumulative impacts Adani states: Given the presence and prevalence of the black-throated finch (southern) in the Project Area, and given mining activity is expected to remove and extensively degrade large tracts of habitat for this endangered species, the Project has the potential to significantly impact upon this subspecies if mitigation is not provided. As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. The black-throated finch has the potential to be cumulatively impacted by other projects in the Study Area. There is potential habitat within the Alpha Coal Project, Galilee Coal (Northern Export Facility) and Kevin's Comer Project to be removed. This increased pressure on black-throated finch habitat in the Study Area is likely to exacerbate the potential significant impact from the Project.	New Twin Hills 'S position is: A Project approval would be inconsistent with the Honourable Tony Burke Minister for Sustainability, Environment, Water, Population and Communities approval of 23 August 2012, in respect of the Alpha Coal mine and rail Project approved which conditioned the approval on the basis that: o the proponent (GVK Hancock) established a trust, with initial funding of $2 million, to conduct research on the black-throated finch and the squatter pigeon, with provision for a more strategic approach to protect all key species in the Galilee Basin in the event that any further mines are approved in the Galilee Basin	Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
49	Emanate on behalf of New Twin Hills	Cumulative impacts	Biodiversity loss	Accordingly the present Project if approved would add to further pressure on an endangered species of the Galilee Basin (e.g. Black-Throated Finch) at time when strategic approach to protection has yet to be endorsed or considered by State and Federal Governments.		Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
49	Emanate on behalf of New Twin Hills	Cumulative impacts	Biodiversity loss	It is neither adequate nor sufficient for a Project of the scale proposed by Adani to not provide an alternative solution in respect of loss of biodiversity other than stating at Section 8-22: *The Project will be required to provide offsets in accordance with Commonwealth and State policies for these unavoidable impacts on habitat.* No reasonable measure has been provided in the EIS to address this fundamental issue.		Volume 1, Section 8.3.2.1, page 8-22	Adani has taken all measure to minimise impacts on biodiversity through appropriate sighting of infrastructure, design, mitigation measures and consideration of existing ecology. Similarly to other mining projects, residual impacts are unavoidable hence the need to offset. For further information on the mitigation measures to reduce impacts on biodiversity please refer to SEIS Volume 4, Appendix J1 for the revised Mine Ecology Report. and EIS Volume 4 Appendix AA Rail Ecology Report.
49	Emanate on behalf of New Twin Hills	Cumulative impacts	Biodiversity loss	The EIS should be refused on this ground as the EIS has not had proper regard to the object as set out in section 3 and section 223 of the EPA, as: • The Project fails to protect Queensland's environment whilst simultaneously permitting development seeking to improve the quality of life now and into the future which would maintain ecological processes on which life depends.	• The Project is not consistent with the principles of ecologically sustainable development as: o Long and short term economic, environmental, social and equity considerations must be effectively integrated in the decision making process. o Threats of serious or irreversible environmental damage or a deficient outcome in respect of an environmental investigation is insufficient grounds to delay measures to prevent environmental degradation. o The rail (and mine) will cause serious environmental harm (i.e. dust, noise and vibration) to the character and values of the Land as a result of inter alia coal dust. This is not in the public interest. o The employment, royalties and other benefits that the minelrail will generate must be balanced against the impact on New Twin Hills ' land and cattle grazing operations together with the impact on the biodiversity and environment. The outcome must be balanced in favour of public interest or consistent with the EPA.	Volume 1, Section 8.3.2.1, page 8-22	The Carmichael Coal Mine and Rail Project EIS and SEIS has been prepared in accordance with the ToR issued for the project. The EIS for the project has considered environmental, economic and social impacts and benefits. The EIS for the project has considered alternatives to the project and cumulative impacts. The project design and operating parameters have considered short, medium and long term requirements. Potential impacts have been addressed through the avoidance, mitigation and offset hierarchy, This hierarchy is endorsed by both the Federal and State governments and has been applied to similar projects in the same region. The project EIS did not conclude that serious environmental and hence social impacts will be caused as a result of coal dust. The project EIS was considered over local, regional and State areas. Public interest for the EIS was sought and the SEIS has been prepared in accordance with that public interest. Further supporting detail can be found in Volumes 1 through 4 of the SEIS.
49	Emanate on behalf of New Twin Hills	Water Resources	Flooding	*Preliminary modelling indicated the extent of the inundation in the Belyando River and Mistake Creek compared with the 2008 Cyclone Helen inundation which was a 100 year ARI storm event.* The 2008 flood event was not the highest on record. Elgin Downs historical data indicates 3 April 1958 was one of the highest. 1954 and 1974 were also two major flood events which were higher than 2008. Landsat images for flood maps for 1983, 2008 and 2011 were not taken at the peak of the floods so inundation would have been greater than indicated on these maps.		Vol 3, Section 3.3.2.2 Vol 4, App AB (Rail Hydrology)	A revised Rail Flood Modelling Report is provide in the SEIS Volume 4 Appendix S1. Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
49	Emanate on behalf of New Twin Hills	Water Resources	Flooding	The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five (5) years so the cumulative impact of geomorphic changes from diversions and other infrastructure will be additional.		Vol 3, Section 6.1.3.1, page 6-24	Cumulative impacts of all proposed developments near the Project (Mine) are unknown.
49	Emanate on behalf of New Twin Hills	Water Resources	Flooding	The Belyando River can be 30-40 kilometres (km) wide in big flood events. The floodplains within the study area are generally used for grazing beef cattle which is of interest to New Twin Hills being a cattle grazier. The modelling conducted for the EIS is insufficient to establish the true extent of flooding that may arise as the information about the Project development (concept design), for example the Project (Rail) is unable to specify bridge lengths. As such, the magnitude of any afflux, and its impacts on farm roads and other flood plain assets relevant to New Twin Hills , is only defined as a range (Volume 3, Section 6.1). On this basis, Adani admits it requires further subsequent modelling once the concept design has been advanced and that cumulative interactions will be taken into account at this stage and it is expected that a design solution can be developed that will avoid significant exacerbation of afflux or flooding extent.	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that New Twin Hills can understand the impacts of the Project in terms of flooding on New Twin Hills 's business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to New Twin Hills and New Twin Hills 's cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	A revised Rail Flood Modelling Report is provide in the SEIS Volume 4 Appendix S1. Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.

49	Emanate on behalf of New Twin Hills	Water Resources	Flooding	Further Adani then states that in general, there is no defined acceptance criterion for afflux caused by railways that applies uniformly to all projects. Achieving a zero afflux outcome is impractical and, normally, the final result is in Adani terms a compromise [at 6-26 Carmichael Coal Mine and Rail Project].		Vol 3, Section 6.1.3.1	A revised Rail Flood Modelling Report is provide in the SEIS Volume 4 Appendix S1. Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
49	Emanate on behalf of New Twin Hills	Water Resources	Flooding	To be clear: The landscape traversed by the rail corridor is characterised by relatively flat floodplains dominated by rivers and creeks which have reasonably well defined channels lying within wider floodplains that are inundated during flood events. Adani's Environmental Management Plan premise for mitigation provides that some level of flooding will have to be accepted by landholders as part of the approval. This comes at a significant cost to New Twin Hills and results in a monetary loss directly caused by the Project.	New Twin Hills 's position is: • The Project will impact of a number of cattle and grain producing businesses including New Twin Hills . • Landholders (New Twin Hills) each of presently have to deal with arrange of natural flood events which are only going to be further exasperated by poorly managed development options, including multiple mines and rail corridors in close proximity to each other. • As evidenced by cumulative risk raking provided by Adani, the significance of flooding is severely underestimated by reference to the Project Hazard and Risk Assessment Volume 3 Section 12 as flooding not ranked even high. • The Project will have similar effects to the already approved GVK- Hancock Alpha project and in combination will add to the effects these developments will have on the highly productive flood plains of the upper Belyando and Suttor Rivers. • The Project must be conditioned to provide maximum benefit for future development in both mining and agriculture and not just to Adani's preferred cost benefit scenario.	Vol 3, Section 6.1.3.1	A revised Rail Flood Modelling Report is provide in the SEIS Volume 4 Appendix S1. Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
49	Emanate on behalf of New Twin Hills	Land	Good Quality Agricultural Land	The Queensland Government recognises that Good Quality Agricu[tural Land (GQAL) is a finite resource as are outlined in the State Planning Policy (SPP) 1/92 Development and Conservation of Good Quality Agricultural Land. Using the area of land currently being mined/impacted as a proxy for the extent of impacts is far too simplistic as Adani proposes. Figure 4.10 of the EIS affirms much of the surrounding area is covered by exploration permits. Perusing the Project simply exacerbates the issues and causes increased costs, time and loss of amenity to New Twin Hills .	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding the preference for a single rail corridor to protect GQAL is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W EMP - Rail). Comments regarding the impact of the mine on GQAL have been noted. The mine plan has been developed to minimise the impact of the Project (Mine) on GQAL. Relevant mitigation and management measures have been outlined where relevant into the Project (Mine) draft EMP and the draft Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix Q1 and R1, respectively).
49	Emanate on behalf of New Twin Hills	Land	Good Quality Agricultural Land	In addition, coal dust from the rail will impact upon the air, grass and water which New Twin Hills operates the cattle grazing business. The coal dust will permeate the water from which New Twin Hills and New Twin Hills 's cattle drink. In addition, the coal dust will coat the grasses that New Twin Hills 's cattle consume. Cattle will not consume grass which has been affected by air-borne particles, changing the taste. This will in turn have an adverse effect on the weight gains made by the cattle and the resulting cost that New Twin Hills is able to obtain for the cattle at market. It may also result in an increase in the number of cattle losses (inadequate weight gain or coal dust toxins found in the air/water/grass). New Twin Hills will also be subject to a reduction in the quality of the air, water and ambiance that existed previously to the proposed Project. Impacts also include noise pollution and vibration from the mine/rail line.		Vol 3, Section 4	Comments regarding coal dust impacts on grazing activities have been noted. The air quality assessment conducted during the EIS concluded that air quality objectives of the EPP(Air) will be met. Further, a study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust. There is no evidence to support a claim that cattle will not feed on pastures affected by air-borne particles. A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
49	Emanate on behalf of New Twin Hills	Land	Soils and erosion	New Twin Hills has been required been required by Government to prepare Environmental Risk Management Plan (ERMP) for New Twin Hills pursuant to the Environmental Protection Act 1994 for its grazing activities pursuant to Great Barrier Reef Protection Amendment Act 2009. The ERMP imposes penalties on a landholder (New Twin Hills) for non-compliance with an approved ERMP. The purpose of an ERMP is to specify management actions that reduce the risk of sediment, fertiliser and chemicals leaving rural properties and entering the waters of the Great Barrier Reef. The rail line is going to severely impact on New Twin Hills 's ability to meet the criteria set down by the government. It is not clear if the Project approvals will require Adani to also operate in accordance with the same restrictions on Adani? The erosion and vegetation loss as a result of the rail line is definitely going to have an impact on the Great Barrier Reef catchment and environs.		Vol 3, Seciton 14.1.2	Ongoing consultation between land holders and Adani regarding specific management measures within ERMPs will be undertaken and where appropriate included within the draft EMP for the Project (Rail) (refer to SEIS Volume 4 Appendix W EMP - Rail). The commitment to consultation has been added to SEIS Volume 4, Appendix G Project Commitments Register.
49	Emanate on behalf of New Twin Hills	Land	Land Use and tenure	At Section 4.12 Adani states the Project (Rail) alignment has been subject to multiple iterations based on feedback from landholders to optimise alignments and minimise impacts on properties. Wherever possible the alignment runs parallel to property boundaries in order to minimise severance of holdings and minimise impacts on property operations. Additional mitigation of impacts on individual property holdings will be managed directly with landholders as part of negotiation of compensation agreements. New Twin Hills 's experience is that the alignment will not minimise impact on New Twin Hills 's cattle operations.		Vol 3, Seciton 14.1.2	Comments regarding the severance of land parcels is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address impacts upon grazing activities (refer to SEIS Volume 4 Appendix W EMP - Rail). Further information on consultation with landholders regrading severance and flooding is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
49	Emanate on behalf of New Twin Hills	Land	Stock routes	Carmichael Coal Mine and Rail Project Volume 3 Section 2 Rail Project Chapter Description At 2.3.3 Road and Stock Crossings Adani states: *Mistake Creek is also a stock crossing (stock route (U401 BEL Y02). Mistake Creek crossing is proposed to be grade separated with stock passing under the proposed rail bridge structure necessary for crossing the watercourse.* How are stock going to cross when the creek is running with a moderate flow?		Vol 3, Section 2.3.3	Comments regarding the stock route have been noted. Management of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, IRC and landholders. Refer to commitments under Section 2.2.3 of SEIS Volume 4 Appendix G.

49	Emanate on behalf of New Twin Hills	Land	Land Use and tenure	A number of quarry and borrow locations have been identified for investigation as shown in Figure 2-7. Geotechnical investigations are underway to better determine the nature of the potential resource and the quantity of resource available. Twin Hills is included on this map. The Project must be conditioned to require that a significant local landmark to the Twin Hills community and should be preserved.		Vol 3, Section 2.6.3, Figure 2-7	Information regarding the five quarries is contained within the SEIS Volume 4 C2 Quarry Approvals Documentation
49	Emanate on behalf of New Twin Hills	General comment	General comment	New Twin Hills will be adversely affected by the proposed railway line running directly through New Twin Hills namely through: • Loss of Vegetation/Good Quality Agricultural Land • Loss of Stock Routes/I ncreased Management Costs • Flooding and Hydraulics Impacts • Unacceptable Cumulative Impacts including adverse impacts on threatened Biodiversity. New Twin Hills 's position is that Adani have proposed an open-cut and underground coal mine and railway line that in its present form has unacceptable impacts for landowners and communities because of the disruption it causes to cattle operations and the local environs. Due to the long term and irreversible impacts that the Project will have on New Twin Hills , New Twin Hills 's business and the environment the application for the Project should be refused.		n/a	Comments are noted. Responses to specific comment are provided herein.
50	Emanate on behalf of Camm (Marracoonda)	Land	Stock routes	The EIS does not give sufficient weight to the importance of the Stock Route Network (SRN) nor does the EIS provide sufficient detail as to whether alternatives were considered to avoid the loss of SRN. Instead Adani states the alternatives are limited by suggesting that the loss is inevitable due to the open mine plan or subsidence from underground mining rather than seeking to modify its mine plan.	Accordingly Camm submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Camm) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Camm's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments regarding the stock route have been noted. There will be no of SRN resulting from the Project, with impacts being limited to realignment and implementation of management at SRN interfaces with the Project. The realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders. Refer to SEIS Volume 4, Appendix G Section 2.3.3 commitment M3.30.
50	Emanate on behalf of Camm (Marracoonda)	Land	Stock routes	To be clear, the SRN is primarily used by the pastoral industry as an alternative to transporting stock by rail or road, and for pasture for emergency agistment and long-term grazing. It is used by utility companies to provide power lines, pipelines and telecommunications; and by the community generally for road transport, and recreational and other purposes such as beekeeping. The Queensland SRN is a highly valued land management tool in respect of its environmental and iconic cultural heritage values, which are recognised nationally as being of significance. Recent droughts have also established the importance of management arrangements for the SRN as the stock route network during times of drought accrues has accrued in greater significance for example in 2002-03. The pattern of stock route use remains one of periodic grazing; relatively short, infrequent periods of intense grazing interspersed with long periods of light or no grazing. Stock cannot walk the stock routes unless both pasture and water are present.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
50	Emanate on behalf of Camm (Marracoonda)	Land	Stock routes	The EIS does not address nor does it consider the significance of a loss of the SRN (whether on a long term or temporary basis) as to impacts on the business of landholders who use the stock routes (or may in the future) including: • Cultural and historical values associated with SRN activities such as sites of stock route facilities; family and personal connections to certain stock routes for both indigenous and non-indigenous peoples; and intrinsic cultural values associated with the simple existence of the stock route network and its linkage to exploration and settlement. • Economic values associated with providing employment to drovers and providing more economical alternatives for moving stock. The increased costs as a result of having to relocate stock routes including increased management costs to Camm. Environmental values associated with the benefits to the environment from walking stock routes as opposed to trucking or transporting by rail (e.g. reduced emissions). • Social values associated with employment opportunities in the droving and pastoral industries as well as local governments.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
50	Emanate on behalf of Camm (Marracoonda)	Cumulative impacts	Biodiversity loss	At page 8-22 of the EIS chapter in respect of cumulative impacts Adani states: Given the presence and prevalence of the black-throated finch (southern) in the Project Area, and given mining activity is expected to remove and extensively degrade large tracts of habitat for this endangered species, the Project has the potential to significantly impact upon this subspecies if mitigation is not provided. As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. The black-throated finch has the potential to be cumulatively impacted by other projects in the Study Area. There is potential habitat within the Alpha Coal Project, Galilee Coal (Northem Export Facility) and Kevin's Comer Project to be removed. This increased pressure on black-throated finch habitat in the Study Area is likely to exacerbate the potential significant impact from the Project.	Camm's position is: A Project approval would be inconsistent with the Honourable Tony Burke Minister for Sustainability, Environment, Water, Population and Communities approval of 23 August 2012, in respect of the Alpha Coal mine and rail Project approved which conditioned the approval on the basis that: o the proponent (GVK Hancock) established a trust, with initial funding of $2 million, to conduct research on the black-throated finch and the squatter pigeon, with provision for a more strategic approach to protect all key species in the Galilee Basin in the event that any further mines are approved in the Galilee Basin	Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.

50	Emanate on behalf of Camm (Marracoonda)	Cumulative impacts	Biodiversity loss	Accordingly the present Project if approved would add to further pressure on an endangered species of the Galilee Basin (e.g. Black-Throated Finch) at time when strategic approach to protection has yet to be endorsed or considered by State and Federal Governments.		Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
50	Emanate on behalf of Camm (Marracoonda)	Cumulative impacts	Biodiversity loss	It is neither adequate nor sufficient for a Project of the scale proposed by Adani to not provide an alternative solution in respect of loss of biodiversity other than stating at Section 8-22: *The Project will be required to provide offsets in accordance with Commonwealth and State policies for these unavoidable impacts on habitat.* No reasonable measure has been provided in the EIS to address this fundamental issue.		Volume 1, Section 8.3.2.1, page 8-22	Adani has taken all measure to minimise impacts on biodiversity through appropriate sighting of infrastructure, design, mitigation measures and consideration of existing ecology. Similarly to other mining projects, residual impacts are unavoidable hence the need to offset. For further information on the mitigation measures to reduce impacts on biodiversity please refer to SEIS Volume 4, Appendix J1 for the revised Mine Ecology Report. and EIS Volume 4 Appendix AA Rail Ecology Report.
50	Emanate on behalf of Camm (Marracoonda)	Cumulative impacts	Biodiversity loss	The EIS should be refused on this ground as the EIS has not had proper regard to the object as set out in section 3 and section 223 of the EPA, as: • The Project fails to protect Queensland's environment whilst simultaneously permitting development seeking to improve the quality of life now and into the future which would maintain ecological processes on which life depends.	• The Project is not consistent with the principles of ecologically sustainable development as: o Long and short term economic, environmental, social and equity considerations must be effectively integrated in the decision making process. o Threats of serious or irreversible environmental damage or a deficient outcome in respect of an environmental investigation is insufficient grounds to delay measures to prevent environmental degradation. o The rail (and mine) will cause serious environmental harm (i.e. dust, noise and vibration) to the character and values of the Land as a result of inter alia coal dust. This is not in the public interest. o The employment, royalties and other benefits that the minelrail will generate must be balanced against the impact on Camm's land and cattle grazing operations together with the impact on the biodiversity and environment. The outcome must be balanced in favour of public interest or consistent with the EPA.	Volume 1, Section 8.3.2.1, page 8-22	The Carmichael Coal Mine and Rail Project EIS and SEIS has been prepared in accordance with the ToR issued for the project. The EIS for the project has considered environmental, economic and social impacts and benefits. The EIS for the project has considered alternatives to the project and cumulative impacts. The project design and operating parameters have considered short, medium and long term requirements. Potential impacts have been addressed through the avoidance, mitigation and offset hierarchy, This hierarchy is endorsed by both the Federal and State governments and has been applied to similar projects in the same region. The project EIS did not conclude that serious environmental and hence social impacts will be caused as a result of coal dust. The project EIS was considered over local, regional and State areas. Public interest for the EIS was sought and the SEIS has been prepared in accordance with that public interest. Further supporting detail can be found in Volumes 1 through 4 of the SEIS.
50	Emanate on behalf of Camm (Marracoonda)	Climate, Natural Hazards and Climate Change	Flooding	The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five (5) years so the cumulative impact of geomorphic changes from diversions and other infrastructure will be additional.		Vol 3, Section 6.1.3.1, page 6-24	Comments regarding the cumulative impacts of the Project on land form changes have been noted. Assessment of cumulative geomorphic changes are discussed in SEIS Volume 1 Section 8 Cumulative Impacts. SIA and SIMP updated with details of landholder consultation, refer to SEIS Volume 4, Appendices D1 and D2.
50	Emanate on behalf of Camm (Marracoonda)	Climate, Natural Hazards and Climate Change	Flooding	The Belyando River can be 30-40 kilometres (km) wide in big flood events. The floodplains within the study area are generally used for grazing beef cattle which is of interest to Camm being a cattle grazier. The modelling conducted for the EIS is insufficient to establish the true extent of flooding that may arise as the information about the Project development (concept design), for example the Project (Rail) is unable to specify bridge lengths. As such, the magnitude of any afflux, and its impacts on farm roads and other flood plain assets relevant to Camm, is only defined as a range (Volume 3, Section 6.1). On this basis, Adani admits it requires further subsequent modelling once the concept design has been advanced and that cumulative interactions will be taken into account at this stage and it is expected that a design solution can be developed that will avoid significant exacerbation of afflux or flooding extent.	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that Camm can understand the impacts of the Project in terms of flooding on Camm's business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to Camm and Camm's cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken (including bridge spans) and has been included in the Rail Flood Modelling Report (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
50	Emanate on behalf of Camm (Marracoonda)	Climate, Natural Hazards and Climate Change	Flooding	Further Adani then states that in general, there is no defined acceptance criterion for afflux caused by railways that applies uniformly to all projects. Achieving a zero afflux outcome is impractical and, normally, the final result is in Adani terms a compromise [at 6-26 Carmichael Coal Mine and Rail Project].		Vol 3, Section 6.1.3.1	The comments on known flood risk is noted. Detailed flood modelling has been undertaken and has been included in the Rail Flood Modelling Report (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
50	Emanate on behalf of Camm (Marracoonda)	Climate, Natural Hazards and Climate Change	Flooding	To be clear: The landscape traversed by the rail corridor is characterised by relatively flat floodplains dominated by rivers and creeks which have reasonably well defined channels lying within wider floodplains that are inundated during flood events. Adani's Environmental Management Plan premise for mitigation provides that some level of flooding will have to be accepted by landholders as part of the approval. This comes at a significant cost to Camm and results in a monetary loss directly caused by the Project.	Camm's position is: • The Project will impact of a number of cattle and grain producing businesses including Camm. • Landholders (Camm) each of presently have to deal with arrange of natural flood events which are only going to be further exasperated by poorly managed development options, including multiple mines and rail corridors in close proximity to each other. • As evidenced by cumulative risk raking provided by Adani, the significance of flooding is severely underestimated by reference to the Project Hazard and Risk Assessment Volume 3 Section 12 as flooding not ranked even high. • The Project will have similar effects to the already approved GVK- Hancock Alpha project and in combination will add to the effects these developments will have on the highly productive flood plains of the upper Belyando and Suttor Rivers. • The Project must be conditioned to provide maximum benefit for future development in both mining and agriculture and not just to Adani's preferred cost benefit scenario.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.

50	Emanate on behalf of Camm (Marracoonda)	Land	Good Quality Agricultural Land	The Queensland Government recognises that Good Quality Agricu[tural Land (GQAL) is a finite resource as are outlined in the State Planning Policy (SPP) 1/92 Development and Conservation of Good Quality Agricultural Land. Using the area of land currently being mined/impacted as a proxy for the extent of impacts is far too simplistic as Adani proposes. Figure 4.10 of the EIS affirms much of the surrounding area is covered by exploration permits. Perusing the Project simply exacerbates the issues and causes increased costs, time and loss of amenity to Camm.	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding the preference for a single rail corridor to protect GQAL is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W EMP - Rail). Comments regarding the impact of the mine on GQAL have been noted. The mine plan has been developed to minimise the impact of the Project (Mine) on GQAL. Relevant mitigation and management measures have been outlined where relevant into the Project (Mine) draft EMP and the draft Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix Q1 and R1, respectively).
50	Emanate on behalf of Camm (Marracoonda)	Land	Good Quality Agricultural Land	In addition, coal dust from the rail will impact upon the air, grass and water which Camm operates the cattle grazing business. The coal dust will permeate the water from which Camm and Camm's cattle drink. In addition, the coal dust will coat the grasses that Camm's cattle consume. Cattle will not consume grass which has been affected by air-borne particles, changing the taste. This will in turn have an adverse effect on the weight gains made by the cattle and the resulting cost that Camm is able to obtain for the cattle at market. It may also result in an increase in the number of cattle losses (inadequate weight gain or coal dust toxins found in the air/water/grass). Camm will also be subject to a reduction in the quality of the air, water and ambiance that existed previously to the proposed Project. Impacts also include noise pollution and vibration from the mine/rail line.		Vol 3, Section 4	Comments regarding coal dust impacts on grazing activities have been noted. The air quality assessment conducted during the EIS concluded that air quality objectives of the EPP(Air) will be met. Further, a study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust. There is no evidence to support a claim that cattle will not feed on pastures affected by air-borne particles. A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
50	Emanate on behalf of Camm (Marracoonda)	General comment	General comment	Camm will be adversely affected by the proposed railway line running directly through Marracoonda namely through: • Loss of Vegetation/Good Quality Agricultural Land • Loss of Stock Routes/I ncreased Management Costs • Flooding and Hydraulics Impacts • Unacceptable Cumulative Impacts including adverse impacts on threatened Biodiversity. Camm's position is that Adani have proposed an open-cut and underground coal mine and railway line that in its present form has unacceptable impacts for landowners and communities because of the disruption it causes to cattle operations and the local environs. Due to the long term and irreversible impacts that the Project will have on Camm, Camm's business and the environment the application for the Project should be refused.		n/a	Comments are noted. Responses to specific comment are provided herein.
51	Emanate on behalf of Camm (Nungaroo)	Land	Stock routes	The EIS does not give sufficient weight to the importance of the Stock Route Network (SRN) nor does the EIS provide sufficient detail as to whether alternatives were considered to avoid the loss of SRN. Instead Adani states the alternatives are limited by suggesting that the loss is inevitable due to the open mine plan or subsidence from underground mining rather than seeking to modify its mine plan.	Accordingly Camm submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Camm) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Camm's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments regarding the stock route have been noted. There will be no of SRN resulting from the Project, with impacts being limited to realignment and implementation of management at SRN interfaces with the Project. The realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders. Refer to SEIS Volume 4, Appendix G Section 2.3.3 commitment M3.30.
51	Emanate on behalf of Camm (Nungaroo)	Land	Stock routes	To be clear, the SRN is primarily used by the pastoral industry as an alternative to transporting stock by rail or road, and for pasture for emergency agistment and long-term grazing. It is used by utility companies to provide power lines, pipelines and telecommunications; and by the community generally for road transport, and recreational and other purposes such as beekeeping. The Queensland SRN is a highly valued land management tool in respect of its environmental and iconic cultural heritage values, which are recognised nationally as being of significance. Recent droughts have also established the importance of management arrangements for the SRN as the stock route network during times of drought accrues has accrued in greater significance for example in 2002-03. The pattern of stock route use remains one of periodic grazing; relatively short, infrequent periods of intense grazing interspersed with long periods of light or no grazing. Stock cannot walk the stock routes unless both pasture and water are present.	Accordingly Camm submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Camm) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Camm's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.

51	Emanate on behalf of Camm (Nungaroo)	Land	Stock routes	The EIS does not address nor does it consider the significance of a loss of the SRN (whether on a long term or temporary basis) as to impacts on the business of landholders who use the stock routes (or may in the future) including: • Cultural and historical values associated with SRN activities such as sites of stock route facilities; family and personal connections to certain stock routes for both indigenous and non-indigenous peoples; and intrinsic cultural values associated with the simple existence of the stock route network and its linkage to exploration and settlement. • Economic values associated with providing employment to drovers and providing more economical alternatives for moving stock. The increased costs as a result of having to relocate stock routes including increased management costs to Camm. Environmental values associated with the benefits to the environment from walking stock routes as opposed to trucking or transporting by rail (e.g. reduced emissions). • Social values associated with employment opportunities in the droving and pastoral industries as well as local governments.	Accordingly Camm submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Camm) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Camm's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
51	Emanate on behalf of Camm (Nungaroo)	Cumulative impacts	Biodiversity loss	At page 8-22 of the EIS chapter in respect of cumulative impacts Adani states: Given the presence and prevalence of the black-throated finch (southern) in the Project Area, and given mining activity is expected to remove and extensively degrade large tracts of habitat for this endangered species, the Project has the potential to significantly impact upon this subspecies if mitigation is not provided. As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. The black-throated finch has the potential to be cumulatively impacted by other projects in the Study Area. There is potential habitat within the Alpha Coal Project, Galilee Coal (Northem Export Facility) and Kevin's Comer Project to be removed. This increased pressure on black-throated finch habitat in the Study Area is likely to exacerbate the potential significant impact from the Project.	Camm's position is: A Project approval would be inconsistent with the Honourable Tony Burke Minister for Sustainability, Environment, Water, Population and Communities approval of 23 August 2012, in respect of the Alpha Coal mine and rail Project approved which conditioned the approval on the basis that: o the proponent (GVK Hancock) established a trust, with initial funding of $2 million, to conduct research on the black-throated finch and the squatter pigeon, with provision for a more strategic approach to protect all key species in the Galilee Basin in the event that any further mines are approved in the Galilee Basin	Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
51	Emanate on behalf of Camm (Nungaroo)	Cumulative impacts	Biodiversity loss	Accordingly the present Project if approved would add to further pressure on an endangered species of the Galilee Basin (e.g. Black-Throated Finch) at time when strategic approach to protection has yet to be endorsed or considered by State and Federal Governments.		Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
51	Emanate on behalf of Camm (Nungaroo)	Cumulative impacts	Biodiversity loss	It is neither adequate nor sufficient for a Project of the scale proposed by Adani to not provide an alternative solution in respect of loss of biodiversity other than stating at Section 8-22: *The Project will be required to provide offsets in accordance with Commonwealth and State policies for these unavoidable impacts on habitat.* No reasonable measure has been provided in the EIS to address this fundamental issue.		Volume 1, Section 8.3.2.1, page 8-22	Adani has taken all measure to minimise impacts on biodiversity through appropriate sighting of infrastructure, design, mitigation measures and consideration of existing ecology. Similarly to other mining projects, residual impacts are unavoidable hence the need to offset. For further information on the mitigation measures to reduce impacts on biodiversity please refer to SEIS Volume 4, Appendix J1 for the revised Mine Ecology Report. and EIS Volume 4 Appendix AA Rail Ecology Report.
51	Emanate on behalf of Camm (Nungaroo)	Cumulative impacts	Biodiversity loss	The EIS should be refused on this ground as the EIS has not had proper regard to the object as set out in section 3 and section 223 of the EPA, as: • The Project fails to protect Queensland's environment whilst simultaneously permitting development seeking to improve the quality of life now and into the future which would maintain ecological processes on which life depends.	• The Project is not consistent with the principles of ecologically sustainable development as: o Long and short term economic, environmental, social and equity considerations must be effectively integrated in the decision making process. o Threats of serious or irreversible environmental damage or a deficient outcome in respect of an environmental investigation is insufficient grounds to delay measures to prevent environmental degradation. o The rail (and mine) will cause serious environmental harm (i.e. dust, noise and vibration) to the character and values of the Land as a result of inter alia coal dust. This is not in the public interest. o The employment, royalties and other benefits that the minelrail will generate must be balanced against the impact on Camm's land and cattle grazing operations together with the impact on the biodiversity and environment. The outcome must be balanced in favour of public interest or consistent with the EPA.	Volume 1, Section 8.3.2.1, page 8-22	The Carmichael Coal Mine and Rail Project EIS and SEIS has been prepared in accordance with the ToR issued for the project. The EIS for the project has considered environmental, economic and social impacts and benefits. The EIS for the project has considered alternatives to the project and cumulative impacts. The project design and operating parameters have considered short, medium and long term requirements. Potential impacts have been addressed through the avoidance, mitigation and offset hierarchy, This hierarchy is endorsed by both the Federal and State governments and has been applied to similar projects in the same region. The project EIS did not conclude that serious environmental and hence social impacts will be caused as a result of coal dust. The project EIS was considered over local, regional and State areas. Public interest for the EIS was sought and the SEIS has been prepared in accordance with that public interest. Further supporting detail can be found in Volumes 1 through 4 of the SEIS.
51	Emanate on behalf of Camm (Nungaroo)	Climate, Natural Hazards and Climate Change	Flooding	The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five (5) years so the cumulative impact of geomorphic changes from diversions and other infrastructure will be additional.		Vol 3, Section 6.1.3.1, page 6-24	Comments regarding the cumulative impacts of the Project on land form changes have been noted. Assessment of cumulative geomorphic changes are discussed in SEIS Volume 1 Section 8 Cumulative Impacts.

51	Emanate on behalf of Camm (Nungaroo)	Climate, Natural Hazards and Climate Change	Flooding	The Belyando River can be 30-40 kilometres (km) wide in big flood events. The floodplains within the study area are generally used for grazing beef cattle which is of interest to Camm being a cattle grazier. The modelling conducted for the EIS is insufficient to establish the true extent of flooding that may arise as the information about the Project development (concept design), for example the Project (Rail) is unable to specify bridge lengths. As such, the magnitude of any afflux, and its impacts on farm roads and other flood plain assets relevant to Camm, is only defined as a range (Volume 3, Section 6.1). On this basis, Adani admits it requires further subsequent modelling once the concept design has been advanced and that cumulative interactions will be taken into account at this stage and it is expected that a design solution can be developed that will avoid significant exacerbation of afflux or flooding extent.	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that Camm can understand the impacts of the Project in terms of flooding on Camm's business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to Camm and Camm's cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken (including bridge spans) and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
51	Emanate on behalf of Camm (Nungaroo)	Climate, Natural Hazards and Climate Change	Flooding	Further Adani then states that in general, there is no defined acceptance criterion for afflux caused by railways that applies uniformly to all projects. Achieving a zero afflux outcome is impractical and, normally, the final result is in Adani terms a compromise [at 6-26 Carmichael Coal Mine and Rail Project].		Vol 3, Section 6.1.3.1	The comments on known flood risk is noted. Detailed flood modelling has been undertaken and has been included in the Rail Flood Modelling Report (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
51	Emanate on behalf of Camm (Nungaroo)	Climate, Natural Hazards and Climate Change	Flooding	To be clear: The landscape traversed by the rail corridor is characterised by relatively flat floodplains dominated by rivers and creeks which have reasonably well defined channels lying within wider floodplains that are inundated during flood events. Adani's Environmental Management Plan premise for mitigation provides that some level of flooding will have to be accepted by landholders as part of the approval. This comes at a significant cost to Camm and results in a monetary loss directly caused by the Project.	Camm's position is: • The Project will impact of a number of cattle and grain producing businesses including Camm. • Landholders (Camm) each of presently have to deal with arrange of natural flood events which are only going to be further exasperated by poorly managed development options, including multiple mines and rail corridors in close proximity to each other. • As evidenced by cumulative risk raking provided by Adani, the significance of flooding is severely underestimated by reference to the Project Hazard and Risk Assessment Volume 3 Section 12 as flooding not ranked even high. • The Project will have similar effects to the already approved GVK- Hancock Alpha project and in combination will add to the effects these developments will have on the highly productive flood plains of the upper Belyando and Suttor Rivers. • The Project must be conditioned to provide maximum benefit for future development in both mining and agriculture and not just to Adani's preferred cost benefit scenario.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken and has been included in the Rail Flood Modelling Report (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
51	Emanate on behalf of Camm (Nungaroo)	Land	Good Quality Agricultural Land	The Queensland Government recognises that Good Quality Agricu[tural Land (GQAL) is a finite resource as are outlined in the State Planning Policy (SPP) 1/92 Development and Conservation of Good Quality Agricultural Land. Using the area of land currently being mined/impacted as a proxy for the extent of impacts is far too simplistic as Adani proposes. Figure 4.10 of the EIS affirms much of the surrounding area is covered by exploration permits. Perusing the Project simply exacerbates the issues and causes increased costs, time and loss of amenity to Camm.	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding the preference for a single rail corridor to protect GQAL is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W EMP - Rail). Comments regarding the impact of the mine on GQAL have been noted. The mine plan has been developed to minimise the impact of the Project (Mine) on GQAL. Relevant mitigation and management measures have been outlined where relevant into the Project (Mine) draft EMP and the draft Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix Q1 and R1, respectively).
51	Emanate on behalf of Camm (Nungaroo)	Land	Good Quality Agricultural Land	In addition, coal dust from the rail will impact upon the air, grass and water which Camm operates the cattle grazing business. The coal dust will permeate the water from which Camm and Camm's cattle drink. In addition, the coal dust will coat the grasses that Camm's cattle consume. Cattle will not consume grass which has been affected by air-borne particles, changing the taste. This will in turn have an adverse effect on the weight gains made by the cattle and the resulting cost that Camm is able to obtain for the cattle at market. It may also result in an increase in the number of cattle losses (inadequate weight gain or coal dust toxins found in the air/water/grass). Camm will also be subject to a reduction in the quality of the air, water and ambiance that existed previously to the proposed Project. Impacts also include noise pollution and vibration from the mine/rail line.		Vol 3, Section 4	Comments regarding coal dust impacts on grazing activities have been noted. The air quality assessment conducted during the EIS concluded that air quality objectives of the EPP(Air) will be met. Further, a study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust. There is no evidence to support a claim that cattle will not feed on pastures affected by air-borne particles. A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
51	Emanate on behalf of Camm (Nungaroo)	General comment	General comment	Camm will be adversely affected by the proposed railway line running directly through Nungaroo namely through: • Loss of Vegetation/Good Quality Agricultural Land • Loss of Stock Routes/I ncreased Management Costs • Flooding and Hydraulics Impacts • Unacceptable Cumulative Impacts including adverse impacts on threatened Biodiversity. Camm's position is that Adani have proposed an open-cut and underground coal mine and railway line that in its present form has unacceptable impacts for landowners and communities because of the disruption it causes to cattle operations and the local environs. Due to the long term and irreversible impacts that the Project will have on Camm, Camm's business and the environment the application for the Project should be refused.		n/a	Comments are noted. Responses to specific comment are provided herein.

52	Emanate on behalf of Camm (Picardy)	Land	Stock routes	The EIS does not give sufficient weight to the importance of the Stock Route Network (SRN) nor does the EIS provide sufficient detail as to whether alternatives were considered to avoid the loss of SRN. Instead Adani states the alternatives are limited by suggesting that the loss is inevitable due to the open mine plan or subsidence from underground mining rather than seeking to modify its mine plan.	Accordingly Camm submits: • The CG should adhere to the principle of preservation of stock route in terms of access as part of the Project (Mine) unless the loss is deemed unavoidable in which case the landholder (Camm) must be properly and adequately compensated as a result. • In the premises, should the loss of SRN be unavoidable, the mine plan must be relevantly conditioned such that affected stock routes are not be closed until a suitable realignment of the stock route has been approved by DNRM to minimise delays and disruption to stock route use and the business operations of users of stock routes. • Camm's livelihood (cattle grazing operations) will be detrimentally impacted and must not be disregarded in considering the merits of the Project.	Vol 4, Appendix M, section 3.9 and 6.3.1	Comments regarding the stock route have been noted. There will be no of SRN resulting from the Project, with impacts being limited to realignment and implementation of management at SRN interfaces with the Project. The realignment of the stock route is to be addressed during development of the stock route alignment agreement with DNRM, DTMR, IRC and landholders. Refer to SEIS Volume 4, Appendix G Section 2.3.3 commitment M3.30.
52	Emanate on behalf of Camm (Picardy)	Land	Stock routes	To be clear, the SRN is primarily used by the pastoral industry as an alternative to transporting stock by rail or road, and for pasture for emergency agistment and long-term grazing. It is used by utility companies to provide power lines, pipelines and telecommunications; and by the community generally for road transport, and recreational and other purposes such as beekeeping. The Queensland SRN is a highly valued land management tool in respect of its environmental and iconic cultural heritage values, which are recognised nationally as being of significance. Recent droughts have also established the importance of management arrangements for the SRN as the stock route network during times of drought accrues has accrued in greater significance for example in 2002-03. The pattern of stock route use remains one of periodic grazing; relatively short, infrequent periods of intense grazing interspersed with long periods of light or no grazing. Stock cannot walk the stock routes unless both pasture and water are present.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
52	Emanate on behalf of Camm (Picardy)	Land	Stock routes	The EIS does not address nor does it consider the significance of a loss of the SRN (whether on a long term or temporary basis) as to impacts on the business of landholders who use the stock routes (or may in the future) including: • Cultural and historical values associated with SRN activities such as sites of stock route facilities; family and personal connections to certain stock routes for both indigenous and non-indigenous peoples; and intrinsic cultural values associated with the simple existence of the stock route network and its linkage to exploration and settlement. • Economic values associated with providing employment to drovers and providing more economical alternatives for moving stock. The increased costs as a result of having to relocate stock routes including increased management costs to Camm. Environmental values associated with the benefits to the environment from walking stock routes as opposed to trucking or transporting by rail (e.g. reduced emissions). • Social values associated with employment opportunities in the droving and pastoral industries as well as local governments.		Vol 4, Appendix M, section 3.9 and 6.3.1	Comments are noted. The project does not result in the loss of SRN, but rather will require a realignment and implementation of management at close interfaces with the Project.
52	Emanate on behalf of Camm (Picardy)	Cumulative impacts	Biodiversity loss	At page 8-22 of the EIS chapter in respect of cumulative impacts Adani states: Given the presence and prevalence of the black-throated finch (southern) in the Project Area, and given mining activity is expected to remove and extensively degrade large tracts of habitat for this endangered species, the Project has the potential to significantly impact upon this subspecies if mitigation is not provided. As a consequence of habitat losses to mining, and direct impacts, significant impacts to the black-throated finch (southern) are expected to occur. The black-throated finch has the potential to be cumulatively impacted by other projects in the Study Area. There is potential habitat within the Alpha Coal Project, Galilee Coal (Northern Export Facility) and Kevin's Comer Project to be removed. This increased pressure on black-throated finch habitat in the Study Area is likely to exacerbate the potential significant impact from the Project.	Camm's position is: A Project approval would be inconsistent with the Honourable Tony Burke Minister for Sustainability, Environment, Water, Population and Communities approval of 23 August 2012, in respect of the Alpha Coal mine and rail Project approved which conditioned the approval on the basis that: o the proponent (GVK Hancock) established a trust, with initial funding of $2 million, to conduct research on the black-throated finch and the squatter pigeon, with provision for a more strategic approach to protect all key species in the Galilee Basin in the event that any further mines are approved in the Galilee Basin	Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
52	Emanate on behalf of Camm (Picardy)	Cumulative impacts	Biodiversity loss	Accordingly the present Project if approved would add to further pressure on an endangered species of the Galilee Basin (e.g. Black-Throated Finch) at time when strategic approach to protection has yet to be endorsed or considered by State and Federal Governments.		Volume 1, Section 8.3.2.1, page 8-22	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and the first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species management Plan following the principled of adaptive monitoring and management. Adani will develop a Draft Black-throated Finch Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G Section 2.1.6.
52	Emanate on behalf of Camm (Picardy)	Cumulative impacts	Biodiversity loss	It is neither adequate nor sufficient for a Project of the scale proposed by Adani to not provide an alternative solution in respect of loss of biodiversity other than stating at Section 8-22: *The Project will be required to provide offsets in accordance with Commonwealth and State policies for these unavoidable impacts on habitat.* No reasonable measure has been provided in the EIS to address this fundamental issue.		Volume 1, Section 8.3.2.1, page 8-22	Adani has taken all measure to minimise impacts on biodiversity through appropriate sighting of infrastructure, design, mitigation measures and consideration of existing ecology. Similarly to other mining projects, residual impacts are unavoidable hence the need to offset. For further information on the mitigation measures to reduce impacts on biodiversity please refer to SEIS Volume 4, Appendix J1 for the revised Mine Ecology Report. and EIS Volume 4 Appendix AA Rail Ecology Report.

52	Emanate on behalf of Camm (Picardy)	Cumulative impacts	Biodiversity loss	The EIS should be refused on this ground as the EIS has not had proper regard to the object as set out in section 3 and section 223 of the EPA, as: • The Project fails to protect Queensland's environment whilst simultaneously permitting development seeking to improve the quality of life now and into the future which would maintain ecological processes on which life depends.	• The Project is not consistent with the principles of ecologically sustainable development as: o Long and short term economic, environmental, social and equity considerations must be effectively integrated in the decision making process. o Threats of serious or irreversible environmental damage or a deficient outcome in respect of an environmental investigation is insufficient grounds to delay measures to prevent environmental degradation. o The rail (and mine) will cause serious environmental harm (i.e. dust, noise and vibration) to the character and values of the Land as a result of inter alia coal dust. This is not in the public interest. o The employment, royalties and other benefits that the minelrail will generate must be balanced against the impact on Camm's land and cattle grazing operations together with the impact on the biodiversity and environment. The outcome must be balanced in favour of public interest or consistent with the EPA.	Volume 1, Section 8.3.2.1, page 8-22	The Carmichael Coal Mine and Rail Project EIS and SEIS has been prepared in accordance with the ToR issued for the project. The EIS for the project has considered environmental, economic and social impacts and benefits. The EIS for the project has considered alternatives to the project and cumulative impacts. The project design and operating parameters have considered short, medium and long term requirements. Potential impacts have been addressed through the avoidance, mitigation and offset hierarchy, This hierarchy is endorsed by both the Federal and State governments and has been applied to similar projects in the same region. The project EIS did not conclude that serious environmental and hence social impacts will be caused as a result of coal dust. The project EIS was considered over local, regional and State areas. Public interest for the EIS was sought and the SEIS has been prepared in accordance with that public interest. Further supporting detail can be found in Volumes 1 through 4 of the SEIS.
52	Emanate on behalf of Camm (Picardy)	Climate, Natural Hazards and Climate Change	Flooding	The Project is located within the Galilee Basin and as such is closely related to other projects currently under investigation or expected to commence investigations in the next five (5) years so the cumulative impact of geomorphic changes from diversions and other infrastructure will be additional.		Vol 3, Section 6.1.3.1, page 6-24	Comments regarding the cumulative impacts of the Project on land form changes have been noted. Assessment of cumulative geomorphic changes are discussed in SEIS Volume 1 Section 8 Cumulative Impacts.
52	Emanate on behalf of Camm (Picardy)	Climate, Natural Hazards and Climate Change	Flooding	The Belyando River can be 30-40 kilometres (km) wide in big flood events. The floodplains within the study area are generally used for grazing beef cattle which is of interest to Camm being a cattle grazier. The modelling conducted for the EIS is insufficient to establish the true extent of flooding that may arise as the information about the Project development (concept design), for example the Project (Rail) is unable to specify bridge lengths. As such, the magnitude of any afflux, and its impacts on farm roads and other flood plain assets relevant to Camm, is only defined as a range (Volume 3, Section 6.1). On this basis, Adani admits it requires further subsequent modelling once the concept design has been advanced and that cumulative interactions will be taken into account at this stage and it is expected that a design solution can be developed that will avoid significant exacerbation of afflux or flooding extent.	The Project approval must be conditioned that the mine/rail; only proceed on the basis of a known flooding potential and risk, with further and more sufficient modelling so that Camm can understand the impacts of the Project in terms of flooding on Camm's business operations. A further independent hydrology study needs to be undertaken in order to consider and true impacts on the Project on the Land. In addition, all necessary and required mitigation measures must be put in place to eliminate all adverse hydrological impacts of the Project on the Land. Failure to do so will result in cumulative losses to Camm and Camm's cattle grazing business in perpetuity.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken (including bridge spans) and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
52	Emanate on behalf of Camm (Picardy)	Climate, Natural Hazards and Climate Change	Flooding	Further Adani then states that in general, there is no defined acceptance criterion for afflux caused by railways that applies uniformly to all projects. Achieving a zero afflux outcome is impractical and, normally, the final result is in Adani terms a compromise [at 6-26 Carmichael Coal Mine and Rail Project].		Vol 3, Section 6.1.3.1	The comments on known flood risk is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1) and Mine flood study (refer to SEIS Volume 4 Appendix K4). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
52	Emanate on behalf of Camm (Picardy)	Climate, Natural Hazards and Climate Change	Flooding	To be clear: The landscape traversed by the rail corridor is characterised by relatively flat floodplains dominated by rivers and creeks which have reasonably well defined channels lying within wider floodplains that are inundated during flood events. Adani's Environmental Management Plan premise for mitigation provides that some level of flooding will have to be accepted by landholders as part of the approval. This comes at a significant cost to Camm and results in a monetary loss directly caused by the Project.	Camm's position is: • The Project will impact of a number of cattle and grain producing businesses including Camm. • Landholders (Camm) each of presently have to deal with arrange of natural flood events which are only going to be further exasperated by poorly managed development options, including multiple mines and rail corridors in close proximity to each other. • As evidenced by cumulative risk raking provided by Adani, the significance of flooding is severely underestimated by reference to the Project Hazard and Risk Assessment Volume 3 Section 12 as flooding not ranked even high. • The Project will have similar effects to the already approved GVK- Hancock Alpha project and in combination will add to the effects these developments will have on the highly productive flood plains of the upper Belyando and Suttor Rivers. • The Project must be conditioned to provide maximum benefit for future development in both mining and agriculture and not just to Adani's preferred cost benefit scenario.	Vol 3, Section 6.1.3.1	The impact of flooding on existing cattle properties is noted. Detailed flood modelling has been undertaken and has been included in the Front End Engineering and Design Report - Rail (refer to SEIS Volume 4 Appendix S1). Ongoing consultation with land holders regarding flood management will be undertaken by Adani. Mitigation and management measures for impacts on grazing activities have been included within the Project (Rail) draft EMP (refer to SEIS Volume 4 Appendix W draft EMP - Rail). Further information on consultation with landholders is provided in revised SIA and SIMP SEIS Volume 4, Appendices D1 and D2 and in Section 4.3.8 of Volume 3, Rail studies.
52	Emanate on behalf of Camm (Picardy)	Land	Good Quality Agricultural Land	The Queensland Government recognises that Good Quality Agricu[tural Land (GQAL) is a finite resource as are outlined in the State Planning Policy (SPP) 1/92 Development and Conservation of Good Quality Agricultural Land. Using the area of land currently being mined/impacted as a proxy for the extent of impacts is far too simplistic as Adani proposes. Figure 4.10 of the EIS affirms much of the surrounding area is covered by exploration permits. Perusing the Project simply exacerbates the issues and causes increased costs, time and loss of amenity to Camm.	Any approval of the Project must be conditioned to use an existing /approved single rail corridor, in doing so, the highest retention of GQAL will be achieved. The Mine Plan must be conditioned to minimise the loss of GQAL, as if mining is continued to develop in a manner suggested given the number and extent of exploration permits, it is not inconceivable that most of Queensland's best farming land could be lost to mining or contained within buffer zones. Agricultural GDP (by sector) sits above mining. The generations of Australian landholders must be protected and preserved above the interests of an international exporter of our natural resources. The Project must be conditioned to avoid all loss of GQAL.	Vol 3, Section 4	Comments regarding the preference for a single rail corridor to protect GQAL is noted. Consultation with land holders and government agencies has been undertaken and mitigation and management measures have been developed to specifically address land severance impacts (refer to SEIS Volume 4 Appendix W EMP - Rail). Comments regarding the impact of the mine on GQAL have been noted. The mine plan has been developed to minimise the impact of the Project (Mine) on GQAL. Relevant mitigation and management measures have been outlined where relevant into the Project (Mine) draft EMP and the draft Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendix Q1 and R1, respectively).

52	Emanate on behalf of Camm (Picardy)	Land	Good Quality Agricultural Land	In addition, coal dust from the rail will impact upon the air, grass and water which Camm operates the cattle grazing business. The coal dust will permeate the water from which Camm and Camm's cattle drink. In addition, the coal dust will coat the grasses that Camm's cattle consume. Cattle will not consume grass which has been affected by air-borne particles, changing the taste. This will in turn have an adverse effect on the weight gains made by the cattle and the resulting cost that Camm is able to obtain for the cattle at market. It may also result in an increase in the number of cattle losses (inadequate weight gain or coal dust toxins found in the air/water/grass). Camm will also be subject to a reduction in the quality of the air, water and ambiance that existed previously to the proposed Project. Impacts also include noise pollution and vibration from the mine/rail line.		Vol 3, Section 4	Comments regarding coal dust impacts on grazing activities have been noted. The air quality assessment conducted during the EIS concluded that air quality objectives of the EPP(Air) will be met. Further, a study undertaken at the University of Western Sydney on dairy cows (Andrews et al 1992) found that: Cattle did not find feed unpalatable if coal mine dust was present at a level equivalent to a dust; The presence of coal mine dust in feed did not affect the amount of feed that the cattle ate or the amount of milk that the cattle produced at a level equivalent to a dust deposition rate of 4,000 mg/m3/day and Cattle did not preferentially eat feed that did not contain coal mine dust. The cattle were able to choose between feed that was free of coal mine dust, feed that contained 4,000 mg/m2/day of coal mine dust and feed that contained 8,000 mg/m2/day of coal mine dust. There is no evidence to support a claim that cattle will not feed on pastures affected by air-borne particles. A summary of impacts on agricultural productivity and consultation with landholders is included in Section 4.3.8 of SEIS Volume 3 - Rail. Rail EMP, SEIS Volume 4 Appendix W, has been updated to include control strategies associated with the agricultural work notably strategy included on property severance and disruption to stock movement.
52	Emanate on behalf of Camm (Picardy)	General comment	General comment	Camm will be adversely affected by the proposed railway line running directly through Picardy namely through: • Loss of Vegetation/Good Quality Agricultural Land • Loss of Stock Routes/I ncreased Management Costs • Flooding and Hydraulics Impacts • Unacceptable Cumulative Impacts including adverse impacts on threatened Biodiversity. Camm's position is that Adani have proposed an open-cut and underground coal mine and railway line that in its present form has unacceptable impacts for landowners and communities because of the disruption it causes to cattle operations and the local environs. Due to the long term and irreversible impacts that the Project will have on Camm, Camm's business and the environment the application for the Project should be refused.		n/a	Comments are noted. Responses to specific comment are provided herein.
53	Lock the Gate Alliance	Project Description	Project description	The scale and impact of the mine, described in the EIS, is astounding and detail and accuracy of the EIS leaves us with no confidence in the proponent to carry out the project in a responsible manner	The proposed project is of a scale never seen before in Australia and requires scrutiny of a commensurate rigour. The proponent claims this project will produce 60mtpa of export thermal coal transported by rail to new and existing port infrastructure on the coast.	Vol 2 and Vol 3 Section 2.1 Vol 1 Section 2.3 and 2.4	Opinion noted.
53	Lock the Gate Alliance	Project Description	Project description	The EIS states that there will be twelve trains per day each way to transport up to 60Mtpa of coal, consisting of four locomotives and 164 narrow gauge wagons and that these trains are expected to run 24 hours per day, 320 days a year, with each wagon carrying 84 tonnes of product and each train would be approximately 2.76 km long.	These numbers simply do not add up let alone make practical sense. Simple mathematics shows that given the number of wagons stated, carrying the amount of coal stated, the rail line would be in operation 363 days per year leaving only 2 days for maintenance, and as leeway for any slow down. Given the flood prone nature of the rail route this is quite an oversight. Any assertion that additional capacity will exist on this rail line for third party users must be assessed closely.	Vol 2 and Vol 3 Section 2.2 Vol 1 Section 2.3 and 2.4	Rail operations will be carried out 363 days per year as stated in the EIS. Further details can be found in the revised Traffic Impact Assessment (TIA) undertaken for the Project (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment).
53	Lock the Gate Alliance	Social	Social	No practical consideration of the communities living along this rail line and wishing to cross it seems to have been given in the EIS.		Vol 1 Section 3.3 Vol 3 Section 2.2	A number of mitigation measures are proposed to manage roads, traffic and safety to be incorporated into traffic management plans for the project, EIS Volume 2 Section 11 and Volume 3 Section 11. Adani has committed to work with DTMR and other stakeholders to finalise traffic management plans and resolve level crossing issues. Refer to SEIS Volume 4 Appendix G Section 2.2.3.
53	Lock the Gate Alliance	Water resources	Groundwater		Given that evidence from mines in other parts of Queensland shows gross differences between the actual monitored changes in water level in monitoring bores, compared to modelling, a detailed review of groundwater modelling for the Project must be undertaken.	n/a	Some differences between predicted and actual impacts are inevitable. As far as possible the groundwater modelling work undertaken for the project has been undertaken using a range of conservative assumptions such that the model is expected to over-estimate impacts in most cases. Furthermore a detailed sensitivity analysis has been undertaken which includes an assessment of the sensitivity of a range of model predictions to possible variation in key hydraulic from those calibrated using the groundwater model. The groundwater modelling work has also been peer reviewed. Nevertheless despite these checks and balances it is possible that actual impacts will vary from those predicted. This serves to highlight the need for the proposed ongoing investment in management, monitoring and mitigation presented in the EIS and SEIS.
53	Lock the Gate Alliance	Water resources	Groundwater		The impact of draw down associated with this project is not satisfactorily dealt with. A complete assessment of the impact of groundwater drawdown on bores in the area must be undertaken before any approval can be given to this project.	Vol 2, section 6 Vol 4, App R and N2	Adani has made a commitment to undertake further baseline assessments at any bores which could be significantly impacted by the development and 'make good' any residual impacts on local groundwater users as detailed in Section 7.6.2 SEIS, Volume 4, Appendix K1, Updated Mine Hydrogeology Report.
53	Lock the Gate Alliance	Water resources	Groundwater	A full assessment of neighbouring Doongmabulla Springs, and the threatened and endemic species that live there, has not been undertaken, this is an important omission. We cannot agree with the unsubstantiated assertion that the impact on this important wetland, and its dependent species, of groundwater draw down associated with this project in the short to medium term “is deemed to be insignificant.”		Vol 2, section 5 Vol 4, App N2	Water quality studies have been undertaken for the Doongmabulla springs complex (May and June 2012) and Mellaluka springs complex (April 2013) to provide: 1. Information about the potential groundwater sources to the springs; 2. A set of baseline quality data. These studies are summarised in an additional section to Volume 4 Appendix R (2.4 Doongmabulla and Mellaluka Spring Sampling) and discussed in Volume 4 Appendix R Section 4.8.1 - Doongmabulla Springs and Section 4.8.2 - Mellaluka Springs. Additional ecological work has also now been undertaken at both the Mellaluka and Doongmabulla spring complex sites as detailed in the SEIS Volume 4, Appendix J3, Springs Ecological Assessment Report. Adani is committed to undertaking ongoing monitoring at these sites in order to confirm baseline conditions and hence identify suitable trigger levels. Further assessment of the significance, or otherwise of the predicted aquifer pressure reductions at the various spring sites has also now been included in SEIS Volume 4, Appendix J3, Springs Ecological Assessment Report and Appendix K1, Updated Mine Hydrogeology Report.

53	Lock the Gate Alliance	Water resources	Mine Water Management		More needs to be done to explain what will be done with water released from the mine during times of flood. The EIS claims that water from the mine will be "be subject to significant scrubbing prior to reaching the coast". It is not clear what is meant by this statement. Is the proponent claiming that any pollutants released into the river as a result of this project will be deposited downstream before reaching the Great Barrier Reef? If so, some substantiation for this assertion should be provided, as should assessment of where these pollutants are likely to accumulate, and the effect this would have on the local environment.	Vol 2 Section 2.12	In SEIS Appendix K3 Water Quality Report Water Quality Objectives have been established that need to be met for any water leaving the site. In dry or wet period.
53	Lock the Gate Alliance	Water resources	Groundwater	The impact of the mine on local and regional water will be dramatic. It is stated that "At its greatest extent of operations and development, after approximately 60 years (of a ninety year mine life), drawdowns of up to between 30 to 60 m have been predicted for the groundwater table in the vicinity of the Carmichael River. This results in a decrease (on average) in river baseflow of 7 per cent (approximately 1,000 m3/day)."		Vol 2, Section 6, Vol 4, App R	Potentially significant impacts on groundwater levels and flows in the vicinity of the Carmichael River as predicted. It should be noted, however, that as far as possible the groundwater modelling work undertaken for the project has been undertaken using a range of conservative assumptions such that the model is expected to over-estimate impacts in most cases. Where actual impacts are observed in the Riparian area then Adani has made a commitment to mitigate any observed impacts using measures such as the diversion of minor creeks and/or discharge of suitably treated mine inflows to the river (as detailed in Section 7.6.6 SEIS Volume 4, Appendix K1, Updated Mine Hydrogeology Report).
53	Lock the Gate Alliance	Water resources	Water supply	The 10GL per year of water that the proponent may use for this project then, would be around 15% of the total current use of water resources in the catchment. The proposed extraction of groundwater for use by the proponent would impact on flows in the Belyando River. The proponent proposes to place bores within 3km of that river, which it is admitted would result in "localised reductions in baseflows to the Belyando River system." (5-35). This flow reduction is not quantified, and the extent of the area affected is not estimated or discussed. As with other parts of the EIS, there are contradictory statements made about the degree of water use. The up to 24.5GL of water that may be extracted if alternative figures in the EIS are to be believed indicates that perhaps the level of water use from this project may in fact be as much as 30% of the volume of water currently allocated in the entire Belyando/Suttor catchment.		Vol 2, section 2.12, section 6 Vol 4, App P2	The mean annual flow of the Belyando River is 2,663 GL/year and the median annual flow is 10,239 GL/year. The proposed yearly average 10 GL is a small part of the total flow in the Belyando. The 10 GL allocation is proposed to be coming out of the State Strategic Reserve of 20 GL for sub-catchment E of the Burdekin Basin.
53	Lock the Gate Alliance	Matters of National Environmental Significance	Impact areas	We understand that the matters of national environmental significance that will be affected by the Project are the Black Throated Finch (Southern), Squatter Pigeon, Waxy Cabbage Palm and the Koala. The proponent has shied away from describing the 10,000ha of BTF habitat to be cleared for this project, habitat critical to the survival of this endangered species.	An assessment of the cumulative impacts of mines in the Galilee Basin must be undertaken before any further approvals are granted to ensure this important habitat is not destroyed.	Vol 1 Section 11.5	The revised MNES Chapter includes information collected as part of the BTF studies (BTF Report SEIS Volume 4 Appendix J2) that are currently underway, GAB wetlands from the surveys at Doongmabulla springs (Springs Report SEIS Volume 4 Appendix J3), survey of Waxy Cabbage Palm (Population Survey of WCP, SEIS Volume 4 Appendix J4), Offsite Infrastructure Ecological Assessment Report (SEIS Volume 4 Appendix J5), the revised Ecological Assessment Report (SEIS Volume 4 Appendix J1) and the revised groundwater and surface water modelling (SEIS Volume 4 Appendix K5). This information was used to provide an assessment of the cumulative impacts on MNES (SEIS Volume 4 Appendix H).
53	Lock the Gate Alliance	Climate, Natural Hazards and Climate Change	Climate Change Impacts	The EIS is deficient in respect of climate change impacts in the following key respects: The EIS fails to assess the values and resilience of the receiving environment: The resilience of the atmosphere to further emissions has already been exceeded and the atmosphere is approaching the critical threshold of 2^{o}C warming. However EIS does not acknowledge these facts and assess the proposed emissions in the context of the resilience of the receiving environment.		Vol 2, sections 3 and 8 Vol 4, App T	Noted. scope 3 GHG emissions are not included in government requirements or the TOR.
53	Lock the Gate Alliance	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The EIS fails to include all emissions: As the Project proposes to burn the coal in power stations within the control of the proponent these emissions are scope 1 emissions and should be reported. However the EIS does not include an estimation of these downstream scope 1 emissions.		Vol 2, Section 8 Vol 4, App T	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
53	Lock the Gate Alliance	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The EIS fails to assess cumulative emissions: As carbon dioxide accumulates in the atmosphere, the cumulative emissions for life of the Project are more relevant to the environmental harm caused than annual emissions. However the EIS fails to report the cumulative emissions from all sources.		Vol 2, Section 8 Vol 4, App T	The assessment is in accordance with the ToR in terms of Scope 1 and 2 emissions.
53	Lock the Gate Alliance	Greenhouse Gas Emissions	Greenhouse Gas Emissions	The EIS fails to assess cumulative impacts emissions: The EIS fails to report the impacts cumulative emissions from all sources on climate change.		Vol 2, Section 8 Vol 4, App T	The assessment is in accordance with the ToR in terms of Scope 1 and 2 emissions.
53	Lock the Gate Alliance	Introduction	Alternatives to the project	The EIS fails to identify feasible alternatives: The EIS fails to point out that solar power is to become cheaper than coal in India in 2017 making the need for the project insufficient to justify the above impacts.		Vol 2, Section 8 Vol 4, App T	Opinion noted.
53	Lock the Gate Alliance	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Consequently the EIS fails to provide the climate change information necessary for the Coordinator General (CG) to assess the Project against the relevant statutory criteria.		Vol 2, sections 3 and 8 Vol 4, App T	The assessment is in accordance with the ToR in terms of Scope 1 and 2 emissions.
53	Lock the Gate Alliance	Greenhouse Gas Emissions	Greenhouse Gas Emissions	A preliminary analysis of the project shows that if the EIS where to address these failures it would show that: The cumulative carbon dioxide emissions from the project would exceed 8 billion tonnes, and would: (i) exceed the annual emissions of all the cars on earth; (ii) make a meaningful contribution to increased global temperature and sea levels; (iii) significantly further exceed the safe level of carbon dioxide in the atmosphere; (iv) take the world closer to exceeding the internationally agreed threshold of 2C warming; (v) contribute to the loss of the Great Barrier Reef which brings in approximately $6bn into Australia's economy each year; and (vi) cause approximately $70bn in damages globally through the effects of climate change.		Vol 2, Section 8 Vol 4, App T	The assessment is in accordance with the ToR in terms of Scope 1 and 2 emissions.
53	Lock the Gate Alliance	Introduction	Alternatives to the project	There is not sufficient need for the project to justify these impacts as solar power will become cheaper than coal in 2017, shortly after the project would commence.		Vol 1, Section 1.5	Opinion noted.

53	Lock the Gate Alliance	Social	Social Impact Assessment	The social and economic impacts of this project, along with others in the will be extensive. The EIS does not consider the long-term impacts of their proposed 3000 strong workforce.	This must be done before approval can be granted for the project.	Vol 1 Section 3.3	Workforce impacts are considered and will be monitored on an ongoing bases through consultations with relevant stakeholders as stated in SIA SEIS Volume 4 Appendix D1 Section 8.6 and SIMP SEIS Volume 4 Appendix D2 Section 3.5.
53	Lock the Gate Alliance	Social	Social Impact Assessment	It is wrong to state that there will be a major positive benefit of increased jobs in the local area given the low unemployment rate local employment provided by this project only serves to reduce the availability of a workforce for local businesses.		Vol 1 Section 3;	Workforce impacts are considered and will be monitored on an ongoing bases through consultations with relevant stakeholders as stated in SIA SEIS Volume 4 Appendix D1 Section 8.6 and SIMP SEIS Volume 4 Appendix D2 Section 3.5.
53	Lock the Gate Alliance	Social	Social Impact Assessment	FIFO developments in other parts of Queensland have been met with increasing frustration by local communities, and the mental health and wellbeing of workers is a matter of concern for health professionals. Mitigation methods proposed do not seem adequate in dealing with such an unprecedented proposal.		Vol 1 Section 3 and 4	Workforce impacts are considered and will be monitored on an ongoing bases through consultations with relevant stakeholders as stated in SIA SEIS Volume 4 Appendix D1 Section 8.6 and SIMP SEIS Volume 4 Appendix D2 Section 3.5.
53	Lock the Gate Alliance	Introduction	Environmental Record of Proponent	We understand that Adani is under investigation in India for breaches of Environmental laws. The Minister and the Coordinator General should take this into account and wait for the these investigations to be completed and Adani fully exonerated before allowing such a company to operated in Australia. In addition to these accusations from India we have evidence to prove that Adani have undertaken illegal clearing in		Vol 1, Section 1.1	Adani Mining Pty Ltd (Adani) is the proponent for the Carmichael Coal Mine and Rail Project. Adani is a subsidiary of Adani Enterprises Ltd, and forms part of the broader Adani Group of companies based in Ahmedabad, India. Adani is a registered Australian company with corporate governance and reporting obligations under Australian Law, distinct from the management and obligations of other Adani Group subsidiaries in other jurisdictions. Under both State and Federal laws, Adani is required to obtain all relevant approvals, including all necessary environmental approvals, prior to the commencement of a project. Adani has a proven record of obtaining and complying with all necessary approvals for its projects including its ongoing exploration program for the Carmichael Coal project. Adani is committed to complying with all required approvals for the Project.
53	Lock the Gate Alliance	General comment	General Comment	Unfortunately a complete review of materials in the EIS has not been possible in the time allocated for community submissions and many deficiencies of the EIS have not been mentioned here. Today the Courier-Mail reports that the CG's department have been under extensive pressure to approve projects without proper scrutiny. I would hope that given the immensity of the project at hand, that a full and detailed review of the evidence presented in this EIS will be undertaken by the Department and that the proponent will be required to provide all information they have not provided in this assessment in a supplementary assessment. It is worrying though the level to which companies are increasingly providing initial EIS without full information.	The EIS should not be accepted given it does not fulfil the TOR provided by the department.	n/a	Opinion noted.
54	DNRM	Draft offset strategy	offsite impact areas - mine	The excerpts of the offset requirement associated with each respective PR as per Part 9.2.3 has been extracted from the superseded Policy for vegetation management offsets – version 2.4. The current version is Policy for vegetation management offsets – version 3 dated 30 September 2011.	An offset proposal provided as a solution for meeting specific performance requirements of the relevant regional vegetation management code administered under the Vegetation Management Act 1999 (VM Act) must meet the current Policy for vegetation management offsets – version 3 dated 30 September 2011.	Volume 1 Section 9 9.2.3 Policy for Vegetation Management Offsets (p. 9-3–9-4)	Noted. Adani will ensure Offsets are delivered in accordance with relevant Policies and in accordance with project approval requirements. please refer to revised Offset Strategy Report in SEIS Volume 4 Appendix F.
54	DNRM	Draft offset strategy	offsite impact areas - mine	The EIS states the VM Act regulates clearing in Queensland but does not apply to Level 1 mining activities, as these are defined as 'not assessable development' under the Sustainable Planning Regulation 2009 and as such the Policy for Vegetation Management Offsets applies to the Project (Rail) but will not apply to aspects of the Project (Mine) within the mining lease. There is no acknowledgement of the requirement for approvals to clear vegetation (and possibly a requirement for offsets) for the offsite infrastructure component of the project which will be located outside of the mining leases. The clearing footprint for the offsite infrastructure occurs within endangered REs and Category A areas on a certified PMAV, addressed in Section 2.3 of this document, (these Category A areas constitute 'Restoration Area 4' on Moray Downs, being for the revegetation of areas previously unlawfully cleared). Therefore an offset proposal is likely to be required as a solution for meeting specific performance requirements of the relevant regional vegetation management code and must meet the current Policy for vegetation management offsets – version 3 dated 30 September 2011.	DNRM recommends the proposed pipeline routes be relocated to areas mapped as non-assessable vegetation under the Vegetation Management framework. Should the proposed footprint not avoid the Category A / Restoration Areas, DNRM will be seeking the offsetting of this said Restoration Area in accordance with the Policy for Vegetation Management Offsets – version 3 dated 30 September 2011 in order for DNRM to release Adani from their obligations in regards to this Restoration Area under the Restoration Notice issued on title.	Volume 1Section 9 9.2.3 Policy for Vegetation Management Offsets	The EIS Offset Strategy has been revised to reflect the correct version of the Policy for Vegetation Management Offsets. Please refer to SEIS Volume 4 Appendix F.
54	DNRM	Draft offset strategy	offsite impact areas - mine	A draft offset strategy will need to include offsets for the clearing of assessable vegetation for constructing offsite infrastructure where required. It appears a change in the Offsite Infrastructure footprint has resulted in two pipelines traversing the said Category A areas / Restorations areas. It is suggested there are alternate viable routes for these pipelines available which avoid and minimise the impacts on these assessable areas and accordingly DNRM recommends these be relocated to areas mapped as non-assessable vegetation under the Vegetation Management framework.	(as above)	Volume 1Section 9 9.2.3 Policy for Vegetation Management Offsets	The EIS Offset Strategy has been revised to reflect the correct version of the Policy for Vegetation Management Offsets. Please refer to SEIS Volume 4 Appendix F.
54	DNRM	Draft offset strategy	Restoration Areas	The proposed Mine Project development footprint traverses or is immediately adjacent to two (Restoration Areas 2 and 3) of the four Restoration Areas on Moray Downs, being for the revegetation of areas previously unlawfully cleared.	It is recommended that in order for DNRM to release Adani from their obligations in regards to these two said Restoration Areas under the Restoration Notice issued on title, these said Restoration Areas be offset in accordance with the Biodiversity Offsets Policy (BOP) via the Environmental Authority (EA) process through the Department of Environment and Heritage Protection, in accordance with offsetting an 'offset area' under the BOP. DNRM is currently in negotiations with Environmental Services, EHP (Central Region) and Adani in this regard.	Volume 1 Section 9 9.3.2 Potential impacts – Offset policies administered by the Queensland Government (p. 9-7)	Noted. Offsets for these Restoration Areas is to be addressed through the relevant impact activity - either Exploration or Mining. Adani will continue to consult with DNRM and DEHP regarding the offsetting of the two restorations areas through the current Environmental Authority.
54	DNRM	Draft offset strategy	Draft Offset Strategy - Rail	The project footprint for SP1 of the rail component will result in clearing of concern RE 11.4.11 as identified in Part 9.3.2 which outlines potential impacts in relation to state government offset policies. Note RE 11.4.11 is also a threshold RE as per Table 5 of the relevant regional vegetation management code.	Please identify RE 11.4.11 as a threshold RE under Volume 1 Section 9 Part 9.3.2.	Volume 1 Section 9 9.3.2 Potential impacts – Offset policies administered by the Queensland Government (p. 9-7)	The EIS Offset Strategy has been revised. Please refer to SEIS Volume 4 Appendix F.

54	DNRM	Draft offset strategy	Impact areas	The project footprint for the rail component will result in clearing of high value regrowth vegetation mapped as endangered REs as identified in Part 9.3.2 which outlines potential impacts in relation to state government offset policies. There is scope under the VM Act for a proponent to seek a determination by DNRM Vegetation Management as to whether a project can be determined to be a 'Significant Community Project' pursuant to section 10(5) of the VM Act. The status of significant community project triggers an exemption under Schedule 24 Part 2 of the SP regulation for clearing regulated regrowth vegetation on freehold land and land subject to a lease for agriculture or grazing purposes. The regional vegetation management codes provide for significant community projects in the form of acceptable solutions for performance requirements.	It is advisable, prior to the lodgement of any operational work applications with DNRM, that the proponent, if deems applicable, should seek confirmation from DNRM Vegetation Management of the project being determined to be a Significant Community Project. Please note a declaration of the project being a Significant Project under section 26(1)(a) of the SDPWO Act does not automatically make the project an SCP. The applicant should address and meet the following criteria: a. The project must meet any one of the following categories: • Provides an aesthetic, conservation, economic or cultural benefit to the local or regional community or the State; • Serves an essential need of the community; or • Significantly improves the community's access to services.	Volume 1 Section 9 9.3.2 Potential impacts – Offset policies administered by the Queensland Government (p. 9-7)	Noted
54	DNRM	Draft offset strategy	Impact areas	(as above)	b. The project must meet all of the following considerations: • A project that has specific locational requirements. Hence there is a community need for the project, the location is appropriate based on the project context, and there are no reasonable alternative locations for the project to be located in; • The project benefits are not speculative. Hence the benefits of the project proposal are realistic and supported by evidence; • The benefits of the project are significant to the relevant community (whether local, regional or State community), and the benefits are enduring or long term; and • The project is predominately for the community benefit, and not predominately for other purposes. Furthermore, the benefits are significant to the community and not merely a limited number of people. Please note only interests based solely on the merits of the project and no other ancillary interests/merits regarding the project will be considered in the assessment. A fact sheet on significant community projects is attached to this document. Please address a request to the Senior Vegetation Management Officer, on official letter head and submit to CWVegetationApplication@dnrm.qld.gov.au or post to: DNRM, Att: Vegetation Management PO Box 63 Mackay QLD 4740	Volume 1 Section 9 9.3.2 Potential impacts – Offset policies administered by the Queensland Government (p. 9-7)	Noted
54	DNRM	Draft offset strategy	Impact areas	The EIS states that due to the position of the Project (Mine) on the border of the Brigalow Belt and Desert Uplands, both regions were considered suitable targets for offset acquisition and only the Brigalow Belt was considered for the Project (Rail).	The progression from version 2.4 to the current version 3 of the Policy for Vegetation Management Offsets resulted in changes to offset requirements associated with each respective PR. Please note that the current Offset Policy requires that an offset area must be located within the same bioregion in which the clearing is proposed.	Volume 1 Section 9 9.4 Potential Offsets (p. 9-10)	Noted. The EIS MNES report has been updated, please refer to revised Offset Strategy Report in SEIS Volume 4 Appendix F.
54	DNRM	Project Description	Relevant Legislation and Project Approvals	DNRM Vegetation Management requests that sufficient information is supplied in the EIS, as stipulated in the suggested solution below, to allow appropriate code assessment of operational works involving the clearing of native vegetation. If a State Development Area is declared for the offsite infrastructure, DNRM Vegetation Management will not be triggered as a referral agency for the clearing of assessable vegetation under the VM Act for an MCU and/or RaL application. In this instance, a concurrent development application (DA) for an operational work permit for the clearing of native vegetation will need to be lodged with DNRM. An operational work application for the clearing of native vegetation for the purpose of a project declared to be a significant project under the SDPWO Act as per section 22A of the VM Act will be assessed against the performance requirements of Part S of the relevant regional vegetation management code (RVM code).	Please provide a PVMP for the clearing of assessable vegetation for the purpose of constructing offsite infrastructure. A PVMP must include: a. the purpose for clearing; b. details on how the clearing of vegetation has been avoided or minimised; c. the location and extent of the areas proposed to be cleared, including digital spatial data in ESRI shapefile format; d. response to the performance requirements (PRs) of the relevant RVMP. Note the offsite infrastructure footprint occurs within the Desert Uplands Bioregion, forming part of the Western Bioregions, and the Brigalow Belt Bioregion. Therefore the respective Regional Vegetation Management Code for Western Bioregions and the Regional Vegetation Management Code for Brigalow Belt and New England Tablelands Bioregions will need to be addressed; and	Volume 4 Appendix D 5.6 Relevance of the VM Act to the Project (Offsite Infrastructure) (p. 45)	Noted. A PVMP for the clearing of assessable vegetation for the purpose of constructing offsite infrastructure has been provided in the SEIS.
54	DNRM	Project Description	Relevant Legislation and Project Approvals	If a State Development Area is not declared, DNRM Vegetation Management will be triggered as a referral agency as part of the MCU and/or RaL application process and a DA for an operational work permit will need to be duly lodged with DNRM. In this instance, an operational work application for the clearing of native vegetation will be assessed against the Concurrence Agency Policy for Material Change of Use (MCU) and Part S of the relevant RVM code. As a requirement of an operational work application, a Property Vegetation Management Plan (PVMP), consistent with the Vegetation Management Regulation 2000, must be provided to and approved by the Chief Executive administering the VM Act.	e. where applicable, a vegetation offset proposal consistent with the relevant Policy for Vegetation Management Offsets (Offset Policy) and must include: • how the proposed operational works have been designed and located on the lot/s to avoid and minimise the extent of impact; • the number of hectares needing to be offset for each performance requirement criteria under the relevant code; • the availability of offset areas within the landscape (bioregion) which meet the Offset Policy for each PR. Please note if an Offset Transfer is proposed, within twelve months (12 months) of the date upon which the Development Approval is issued by the State of Queensland, the applicant must legally secure the offset properties that meet the requirements set out in the relevant Offset Policy.	Volume 4 Appendix D 5.6 Relevance of the VM Act to the Project (Offsite Infrastructure) (p. 45)	See the above response.

54	DNRM	Project Description	Project location	The EIS states access road alignments have not yet been determined but will take into consideration utilisation of existing tracks where possible to minimise vegetation clearing.	As outlined in Section 2.1 above, the PVMP must include the location and extent of the clearing footprint and DNRM will consider clearing as a result of the application for the below purposes, consistent with point 2. of the MCU Policy (page 3). • Clearing to construct built infrastructure—including buildings, stormwater management systems, water supply and sewerage systems—that are proposed as part of the MCU application. • Clearing for roads, vehicle parking, vehicle and pedestrian access, utilities corridors, services, fences, firebreaks and fire management lines that are proposed as part of the MCU application. • Clearing that will become exempt if the development application is approved. This includes any of the following examples: o Clearing for routine management and essential management purposes associated with the approved development including clearing to maintain proposed infrastructure, facilities, roads, access routes, utilities, services and fences, and clearing to maintain the safety of persons and property that will be associated with the development.	Volume 2 Section 2 2.10.6.10 Access Roads and Tracks	Noted. A PVMP for the clearing of assessable vegetation for the purpose of constructing offsite infrastructure has been provided in the SEIS.
54	DNRM	Project Description	Project location	(as above)	o Clearing for necessary fire breaks and fire management lines associated with the development. This will be assessed as follows: • All built infrastructure other than underground services, roads and fences will be assessed as requiring clearing for firebreaks with a width of 1.5 times the height of the tallest vegetation adjacent to the infrastructure, or 20m, whichever is the greater. However, evidence may be provided to DNRM that confirms that an alternative firebreak width is required that is consistent with the State Planning Policy (SPP) 1/03 Guideline, or where a planning scheme is consistent with the SPP, the local planning scheme. • In the case of evidence being presented that demonstrates constraints on clearing for fire management as being reasonably imposed and not inconsistent with SPP 1/03 or a relevant planning scheme, DNRM may condition the development so that the full extent of exempt clearing prescribed for essential management under Schedule 26 of the Sustainable Planning Regulation cannot be carried out by current or future landholders	Volume 2 Section 2 2.10.6.10 Access Roads and Tracks	Noted. A PVMP for the clearing of assessable vegetation for the purpose of constructing offsite infrastructure has been provided in the SEIS.
54	DNRM	Project Description	Relevant Legislation and Project Approvals	A review of the location of offsite infrastructure as per Figure 2-43 Offsite Infrastructure Location – GHD – 16-11-2102 – Job No. 41-25215 to determine the clearing footprint shows part of the borehole and pipeline network are located within Category A areas on certified Property Map of Assessable Vegetation (PMAV) 2008/004921. These Category A areas constitute 'Restoration Area 4' on Moray Downs, being for the revegetation of areas previously unlawfully cleared.	It appears a change in the Offsite Infrastructure footprint has resulted in the borehole pipeline network traversing the said Category A areas / Restorations areas. It is suggested there are alternate viable routes for this borehole pipeline network is available which avoid and minimise the impacts on these assessable areas and accordingly DNRM recommends these be relocated to areas mapped as nonassessable vegetation under the Vegetation Management framework. Should the proposed footprint not avoid the Category A / Restoration Areas, DNRM will be seeking the offsetting of this said Restoration Area in accordance with the Policy for Vegetation Management Offsets – version 3 dated 30 September 2011 in order for DNRM to release Adani from their obligations in regards to this Restoration Area, under the Restoration Notice issued on title.	Volume 2 Section 2 Figure 2-43 Offsite Infrastructure Location	Noted. The EIS Offset Strategy has been revised to reflect the correct version of the Policy for Vegetation Management Offsets. Please refer to SEIS Volume 4 Appendix F.
54	DNRM	Nature Conservation	Vegetation clearing	The EIS states the regional ecosystem (RE) mapping within the extent of the offsite infrastructure clearing footprint has not been verified through ground-truthing.	Prior to lodgement of an operational work application with DNRM for the clearing of native vegetation for constructing offsite infrastructure, the applicant, where applicable, should apply for a Property Map of Assessable Vegetation (PMAV) to amend any RE mapping inaccuracies identified.	Volume 2 Section 5 5.3.2 Vegetation Clearing (p. 5-99)	Comment noted.

54	DNRM	Project Description	Relevant Legislation and Project Approvals	DNRM Vegetation Management requests that sufficient information is supplied in the EIS, as stipulated in the suggested solution below, to allow appropriate code assessment of operational works involving the clearing of native vegetation. If a State Development Area is declared for the rail component, DNRM Vegetation Management will not be triggered as a referral agency for the clearing of assessable vegetation under the VM Act for an MCU and/or RaL application. In this instance, a concurrent development application for an operational work permit for the clearing of native vegetation will need to be lodged with DNRM. An operational work application for the clearing of native vegetation for the purpose of a project declared to be a significant project under the SDPWO Act as per section 22A of the VM Act will be assessed against the PRs of Part S of the relevant RVM code. If a State Development Area is not declared, DNRM Vegetation Management will be triggered as a referral agency as part of the MCU and/or RaL application process or as assessment manager for a DA for an operational work permit for clearing vegetation. In this instance, an operational work application for the clearing of native vegetation will be assessed against the Concurrence Agency Policy for Material Change of Use (MCU) and/ or Part S of the relevant RVM code. As a requirement of an operational work application, a PVMP consistent with the Vegetation Management Regulation 2000, must be provided to and approved by the Chief Executive administering the VM Act. The EIS contains a report on 'The Regional Vegetation Management Code Response' for SP2 of the rail component however an equivalent report for SP1 has not been located.	Please provide a PVMP for the clearing of assessable vegetation for SP1 of the rail component. The requirements of a PVMP are stipulated in Section 2.1 of this document. Please note that the PVMP for both SP1 and SP2 must include the location and extent of the clearing footprint provided as digital spatial data in ESRI shapefile format. The span of SP1 occurs largely within the Brigalow Belt bioregion with a minor segment occurring within the Desert Uplands bioregion, forming part of the Western Bioregions. Therefore, a PVMP addressing the Regional Vegetation Management Code for Brigalow Belt and New England Tablelands Bioregions and the Regional Vegetation Management Code for Western Bioregions needs to be provided for the respective segments of the SP1 rail component. In relation to the 'Regional Vegetation Management Code Response' for SP2, the following are comments and further information required to assess the proposal: PR S.2 Wetlands: The identified lacustrine wetland on Lot 2 on GV248 does not meet the definition of a wetland or significant wetland as per the relevant RVM code, therefore there is no requirement to provide an offset to meet this PR. PR S.4 Connectivity: Further information is required to demonstrate that clearing assessable vegetation will meet either the acceptable solution (AS) or PR. If clearing is proposed to be met through the PR, the below points a) to c) need to be individually addressed in accordance with the PR: Areas of mapped remnant vegetation are– a) of sufficient size and configured in a way to maintain ecosystem functioning; and b) of sufficient size and configured in a way to remain in the landscape in spite of any threatening processes; and c) located on the lot(s) that are the subject of the application to maintain connectivity to mapped remnant vegetation on adjacent properties. Where the PR cannot be met, an offset may be proposed as an acceptable solution, as per AS S.4.3, in accordance with the relevant Offset Policy. PR S.7 Conserving endangered and of concern regional ecosystems Part 5.7 Table 10 of the report, listing endangered and of concern REs along the SP2 rail corridor, excludes mapped remnant endangered RE 11.4.8, adjacent to Lot 8 on DC98 and Lot 5 on DC138, associated with Kilcummin Diamond Downs Road.	Volume 4 Appendix D 4.5 Relevance of the VM Act to the Project	Noted. A PVMP for the clearing of assessable vegetation for the purpose of constructing offsite infrastructure has been provided in the SEIS.
54	DNRM	Project Description	Relevant Legislation and Project Approvals	The 'Regional Vegetation Management Code Response' for SP2 states other components of the rail project including construction camps, maintenance yards, temporary works areas etc. have been planned outside of mapped remnant vegetation therefore clearing is not assessable under the VM Act.	Note that for areas that are not subject to an exemption under the SP regulation, an operational work application for the clearing of native vegetation will be required under the VM Act.	Volume 4 Appendix D 4.5 Relevance of the VM Act to the Project (Rail) (p. 32)	Noted. Clearing to comply with VM act
54	DNRM	Nature Conservation	Property Map of Assessable Vegetation	The technical reports for a Property Map of Assessable Vegetation (PMAV) over the project footprint for the SP1 and SP2 rail components, provided as appendices to the EIS and for which the 'Regional Vegetation Management Code Response' for SP2 is based upon, have not been lodged with DNRM as required.	A detailed PMAV application in which the applicant is contesting the RE mapping must be submitted to DNRM with the following supporting material: • PMAV application form with owner/s consent as per the current title; • Prescribed fee of $365.60 • Supporting information ie. technical reports for PMAV prepared for the EIS Where there is an existing certified 20C PMAV (Landholder placed PMAVs) over any of the subject lots, the owner/s of the land are required to consent to the making of a replacement PMAV. Please refer to Table 1 and 2 below for an initial determination of certified 20C PMAVs over the lots subject to a PMAV application for SP1 and SP2. Table 1: Properties subject to a prospective PMAV application for SP1 (for tables and more information please see original submission) Table 2: Properties subject to a prospective PMAV application for SP2 (for tables and more information please see original submission) Please submit the application to CWVegetationApplication@dnrm.qld.gov.au or post to: DNRM Att: Vegetation Management PO Box 63 Mackay QLD 4740	Volume 4 Appendix AI and AJ	Comment noted.
54	DNRM	Project Description	Relevant Legislation and Project Approvals	There is scope under the VM Act for a proponent to seek a determination by DNRM Vegetation Management as to whether a project can be determined to be a 'Significant Community Project' pursuant to section 10(5) of the VM Act. The status of significant community project triggers an exemption under Schedule 24 Part 2 of the SP regulation for clearing regulated regrowth vegetation on freehold land and land subject to a lease for agriculture or grazing purposes. The regional vegetation management codes provide for significant community projects in the form of acceptable solutions for performance requirements	Refer to advice previously provided on seeking a 'Significant Community Project' determination from DNRM.	Volume 4 Appendix D, 4.1	Noted
54	DNRM	Draft Offset Strategy	GAB Springs	The ToR (Part B: Contents of the EIS, section 3, p24) states, "describe the existing environmental values of the area that may be affected by the Project…". Springs have been identified in the Nature Conservation report as being impacted by the project (74_EISDoc_Nature Conservation.pdf p.5-148) They are not mentioned in the Draft Offsets Strategy s 9.3.1 –Potential impacts – EPBC Act EOP.	Please include Doongmabulla and Mellaluka springs in this strategy. Their EPBC status is endangered and the RE numbers are 10.3.31 and 11.3.22 respectively. Where a potential offset is not possible, please discuss how impacts will be addressed in the strategy.	Volume 1 Section 9 9.3.1 and 9.3.2 (p. 9-6 and 9-7)	Potential impacts to the Doongmabulla Springs and Mellaluka Springs have been updated in the SEIS. Please refer to Volume 4 Appendices F (Offsets Strategy), H (MNES Report), J1 (Revised Mine Ecology Report), J3 (Doongmabulla& Mellaluka Springs Report). Detailed mitigation measures for potential impacts have been provided. The assessment concluded that the REs noted did not require offsetting.
54	DNRM	EMP - Offsite	Groundwater	The Burdekin WRP is mentioned in this section but not the Water Regulation 2002. Drawdown is predicted to occur in the Highlands Declared Subartesian Area and this is not discussed.	Please include the Water Regulation 2002 with reference to the Highlands Declared Subartesian Area.	Volume 2 Section 14 14.5.2 Applicable Legislation and policies (p. 14-20)	Whilst the submission is noted against the EMP, this has been dealt with in other areas of the EIS and SEIS pertaining to water management and approvals. See the following sections of the seism for further details, Volume 4 C1 Project Approvals, Volume 4 Appendix K5 Hydrology, Volume 4 Appendix k3 Water Quality, Volume 4 Appendix K1 Hydrogeology.

54	DNRM	EMP - Offsite	Groundwater	This section is incomplete. Please include the Water Regulation 2002 as it regulates relevant declared subartesian areas such as the Great Artesian Basin Declared Subartesian Area and Highlands Declared Subartesian Area.	Discuss further potential frameworks and mechanisms for the sustainable management of water supply.	Volume 2 Section 14 14.20.1 Groundwater – Legislative framework	Whilst the submission is noted against the EMP, this has been dealt with in other areas of the EIS and SEIS pertaining to water management and approvals. See the following sections of the seism for further details, Volume 4 C1 Project Approvals, Volume 4 Appendix K5 Hydrology, Volume 4 Appendix k3 Water Quality, Volume 4 Appendix K1 Hydrogeology.
54	DNRM	EMP - Offsite	GDEs	This section is incomplete. This section does not adequately describe the full range of GDE's or aquatic ecosystems near the offsite infrastructure area.	Please discuss the full range of possible GDEs near the off-site infrastructure area (i.e., GDEs developed on and in alluvium associated with drainages found in Regional Ecosystem (landzone 3) mapping available from DEHP – REs 10.3.4 and 10.3.6 and potential subterranean aquatic ecosystems in North Creek and other drainages associated with the area.).	Volume 2 Section 14 14.20.2 Environmental Values (p.14-59)	Please refer to SEIS volume 4 Appendix J5 for the Offsite Ecology Impact assessment including discussion on impacts to GDE's in regards to offsite infrastructure. Note that offsite water supply options have been amended, refer to SEIS Volume 4 Appendix B for details. Adani will develop a Draft Groundwater Dependant Ecosystem (GDE) Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G, Section 2.3.4.
54	DNRM	EMP - Offsite	GDEs	GDEs developed on and in local alluvium may be impacted by drawdown.	Please thoroughly discuss potential impacts on GDEs from drawdown of groundwater supply bores.	Volume 2 Section 14 Table 14-38 Potential Environmental Impacts - Operation (p. 14-60)	Please refer to SEIS volume 4 Appendix J5 for the Offsite Ecology Impact assessment including discussion on impacts to GDE's in regards to offsite infrastructure. Note that offsite water supply options have been amended, refer to SEIS Volume 4 Appendix B for details. Adani will develop a Draft Groundwater Dependant Ecosystem (GDE) Management Plan for approval prior to the commencement of construction, refer to SEIS Volume 4, Appendix G, Section 2.3.4.
54	DNRM	EMP - Mine	Groundwater	The Water Act 2000 and the Burdekin WRP 2007 are discussed, but not the GAB WRP 2006 or the Water Regulation 2002 (which regulates the Highlands Declared Subartesian Area). Drawdowns from the project are predicted in the groundwater resources of the GAB and the Highlands Declared Subartesian Area.	Please include references to the GAB WRP 2006 and the Water Regulation 2002 and explain how they regulate groundwater resources in the mine area.	Volume 2 Section 13 Table 13-6 Summary of Relevant Environmental Legislation – Mining Activities (p. 13-21)	Whilst the submission is noted against the EMP, this has been dealt with in other areas of the EIS and SEIS pertaining to water management and approvals. See the following sections of the seism for further details, Volume 4 C1 Project Approvals, Volume 4 Appendix K5 Hydrology, Volume 4 Appendix k3 Water Quality, Volume 4 Appendix K1 Hydrogeology.
54	DNRM	EMP - Mine	Groundwater	Table 13-36 identifies infiltration of surface water into groundwater via subsidence cracks from underground mining as a potential environmental impact. How this is addressed is not clear in the EMP. Ponding in subsidence areas is assumed to occur (table 13-73, 74), but in table 13-99, infiltration to GW is not listed as a potential subsidence impact.	Please include infiltration of surface water to GW resources in subsidence areas as a potential subsidence impact. Discuss how this may alter or intercept current recharge and discharge processes for GW in locations within and away from the subsidence zones, in terms of potential impacts to: • the possible interaction between the Dunda Beds, overlying alluvium and the Carmichael River (p13-118), • The longitudinal relationship of gaining and losing in the Carmichael River • Riparian vegetation along the Carmichael River and Cabbage Tree Ck that appears to be dependent on alluvial GW • The 153000m3/day contribution of GW to Carmichael River flow • The relationship between 30m drawdown in the Carmichael River and subsidence (p13-120) (please clarify) • GDEs, aquitard integrity and GAB recharge areas, if a maximum fracture zone height of 150m occurs above each mined seam and creates free draining conditions and increased vertical conductivity.	Volume 2 Section 13 Table 13-36 Potential Environmental Impacts – Construction (p. 13-78, 13-203)	The submission is in regards to a range of water impacts and therefore the submitter is directed to the following sections of the SEIS for updated information: Volume 4 Appendix K1 Hydrogeology, Appendix K2 Water Balance, Appendix K3 Water Quality, Appendix K4 Flood Study, Appendix K5 Hydrology, Appendix I1 Subsidence Assessment Appendix J1 revised Mine Ecology Report.
54	DNRM	EMP - Mine	Groundwater	The EMP states that a water licence is required in relation to the extraction of groundwater through mine dewatering. If dewatering causes drawdowns in GAB aquifers (which are also at risk from loss of integrity in the Rewan Fm and Dunda Beds from dewatering and subsidence cracks), then the proponent may need to identify the potential take from the GAB under the WRP.	Please discuss potential take from the GAB in the EMP.	Volume 2 Section 13 13.20.2 Environmental Values (p. 13-118)	The EMPs presented in the EIS are proposed project implementation documents providing a framework for the management, monitoring and mitigation of key project impacts arising from the EIS. These EMPs are not the primary impact assessment document and hence this submission should refer to the relevant sections of the EIS where this impact assessment and commentary can provide the information sought. Where there has been an amendment to impact assessment studies and findings, these have been reflected in those sections of the SEIS, and if required, included in the SEIS EMPs. Please refer to Mine Hydrogeology Report in SEIS Volume 4 Appendix K1 for the additional modelling undertaken as part of the SEIS.
54	DNRM	EMP - Mine	Groundwater	The source aquifer for the Mellaluka Springs is not known, and there is nowhere specifically in the EMP where a mechanism is stated for determining the source aquifer so that monitoring can be appropriately planned.	Please include a process for determining the source aquifer for the Mellaluka Springs.	Volume 2 Section 13 13.20.2 Environmental Values (p. 13-118)	The EMPs presented in the EIS are proposed project implementation documents providing a framework for the management, monitoring and mitigation of key project impacts arising from the EIS. These EMPs are not the primary impact assessment document and hence this submission should refer to the relevant sections of the EIS where this impact assessment and commentary can provide the information sought. Where there has been an amendment to impact assessment studies and findings, these have been reflected in those sections of the SEIS, and if required, included in the SEIS EMPs. Please refer to Mine Hydrogeology Report in SEIS Volume 4 Appendix K1 for the additional modelling undertaken as part of the SEIS. Please refer to Volume 4 Appendix J3 for the Springs Ecology Assessment.
54	DNRM	EMP - Mine	Groundwater	The statement about riparian vegetation on the Carmichael River omits a discussion about the relationship between Livistona lanuginosa and GW supported flows in the Carmichael River, as is stated on p5-147 of the Nature Conservation report.	The statement about riparian vegetation on the Carmichael River needs to specifically identify Livistona lanuginosa as an EPBC listed threatened species that is dependent on GW-supported flows in the Carmichael River.	Volume 2 Section 13 13.20.2 Environmental Values (p. 13-118)	The relationship of the Waxy Cabbage Palm and groundwater is discussed in Mine Hydrogeology Report in SEIS Volume 4 Appendix K1, Waxy Cabbage Palm Survey in SEIS Volume Appendix J4 and revised MNES Report in SEIS Volume 4 Appendix H.
54	DNRM	EMP - Mine	GAB Springs	Drawdown impacts on EPBC-listed springs are predicted, however it is not clear what the term 'drawdown' means. Is this a lowering of potentiometric head in the aquifers contributing to the spring, a lowering of the spring head itself or a lowering of the surface water level at the spring?	Please clarify what is meant by the term "drawdown" and describe exactly what will happen to the spring flow, the surrounding wetted area and its ecology if potential drawdown impacts occur. Please acknowledge the alternate names for the springs under the EPBC Act and their EPBC status in this section.	Volume 2 Section 13 Table 13-55 Potential Environmental Impacts – Operations (p. 13-119)	Drawdown impacts on Doongmabulla Springs are predicted to be minor. Preliminary drawdown predictions for Mellaluka Springs indicate drawdown in the source aquifer of 0.05-0.0.12m. Please refer to the Mine Hydrogeology Report for additional information in SEIS Volume 4 Appendix K1.
54	DNRM	EMP - Mine	Groundwater	The ToR requires (p.46) "measures to avoid or mitigate potential impacts on groundwater-dependent ecosystems." Describe the proposed monitoring for each identified groundwater dependent ecosystem. The only GDEs identified in relation to groundwater level monitoring are Doongmabulla and Mellaluka springs.	This table should be updated with sites adjacent to the Carmichael River and further GDE monitoring sites . Measures to avoid or mitigate potential impacts on groundwater-dependent ecosystems should be clearly described in the EMP. Monitoring is necessary along with impact avoidance and/or mitigation strategies.	Volume 2 Section 13 13.20.6 Monitoring and Corrective Action, Table 13-59 (p. 13-123)	Impacts to GDEs and Springs are presented in the SEIS including proposed management and mitigation measures. Please refer to Volume 4 Appendix J1 (revised ecology report), Volume 4 Appendix J3 (Springs Report), Volume $ Appendix Q1 (Mine EMP)

54	DNRM	EMP - Mine	Groundwater	The ToR requires (p.46) "In any groundwater aquifers found to contain stygofauna, describe the potential impacts on stygofauna of any changes in the quality and quantity of the groundwater, and describe any mitigation measures that may be applied." The EMP does not contain any stygofaunal sampling or mitigation measures.	Include stygofaunal sampling and mitigation measures	Volume 2 Section 13 13.20.6 Monitoring and Corrective Action (p. 13-123)	Please refer to revised Mine EMP in regards to stygofauna sampling commitments, SEIS Volume 4 Appendix Q1.
54	DNRM	EMP - Mine	Groundwater	Livistona lanuginosa is identified in the project area as being restricted to the Carmichael River channel. The statements about Livistona lanuginosa in the EMP do not mention the relationship between groundwater, drawdown (30m) and subsidence that may impact the Carmichael River. This relationship is identified in the Nature Conservation report, p5-147. There needs to be a link between impacts on the river, alluvium and groundwater processes and impacts to the palm in the EMP. Note that section 3.4.2 , p. 51, of the ToR requires the description of detailed measures to mitigate the impacts of subsidence on aquatic and terrestrial ecosystems, including the impacts of lowered water tables on native Vegetation.	Please describe the potential impacts from groundwater drawdown and subsidence on the Livistona palm in the EMP, and include mitigation measures.	Volume 2 Section 13 13.23.2.2 Flora Species (p. 13-156)	The relationship of the Waxy Cabbage Palm and groundwater is discussed in Mine Hydrogeology Report in SEIS Volume 4 Appendix K1, Waxy Cabbage Palm Survey in SEIS Volume Appendix J4 and revised MNES Report in SEIS Volume 4 Appendix H.
54	DNRM	Water resources	GDEs	There is inadequate consideration of GDEs in the EIS. The ToR required an identification of all types of GDEs occurring within and outside the project area and potentially impacted by project activities. The identification of GDEs in the Aquatic Ecology report is not systematic. It is narrative and not evidence-based.	Please present a systematic, comprehensive identification of GDEs within and outside the project area and potentially impacted by project activities. This should be based on an analysis and discussion of regional ecosystem and wetlands mapping together with hydrogeological information drawn from other parts of the EIS. For example, Table 5- 7 in the Nature Conservation report lists a number of REs which are GDEs. The Hydrogeology Report states that groundwater levels in the vicinity of the Carmichael River are 2-11 m BGL. This information should be brought together to map areas of potential GDEs, and the groundwater level data analysed to inform the likely groundwater dependence of the potential GDEs and the likely impacts of the project activities.	Volume 4 Appendix O1 2.2.2 Groundwater Dependant Ecosystems (p. 2-1 – 2-2)	The revised SEIS Nature Conservation and MNES Chapters will include information on springs from the surveys at Doongmabulla and Mellaluka springs (Refer to SEIS Volume 4 Appendix J3 Springs Ecological Assessment Report) and the revised groundwater and surface water modelling (Refer to SEIS Volume 4 Appendix K5 Revised Mine Hydrology Impact Assessment Report, and SEIS Volume 4 Appendix K1 Updated Mine Hydrogeology Report).
54	DNRM	Nature Conservation	Aquatic Ecology	Incorrect statement regarding requirement in the ToR regarding proof of endemism of stygofauna. On p. 5-19 it is stated that "In Queensland, to satisfy the ToR, endemism needs to be disproved at the Family or Order level for stygofauna…" The ToR does not make any reference to endemism in relation to taxonomic identification.	Remove the statement regarding endemism based on taxonomic level. For most fauna, the level of endemism cannot be determined at the higher taxonomic level. Finer level identification (species level) is needed to inform assessment of endemism.	Volume 4 Appendix O1 5.6.2.1 Potential Impact (p. 5-18 – 5-19)	The revised SEIS Nature Conservation and MNES Chapters will include information on GAB wetlands from the surveys at Doongmabulla springs (Refer to SEIS Volume 4 Appendix J3 Springs Ecological Assessment Report), Waxy Cabbage Palm survey (Refer to SEIS Volume 4 Appendix J4 Waxy Cabbage Palm Assessment Report), and the revised groundwater (Refer to SEIS Volume 4 Appendix K1 Updated Mine Hydrogeology Report).
54	DNRM	Water resources	GDEs	The assessments by DNRM and QWC that identify drawdowns of over 0.2 m as significant should not be used in this EIS. These tolerances do not indicate 'significance' of impact to a spring from an ecological viewpoint and the proponent needs to identify the potential impact from the drawdown.	Please remove the statements that connect the drawdowns in the springs with drawdowns in a different area and industry.	Volume 2 Section 5 5.4.4.1 Changes to Groundwater Dependent Ecosystems (p. 5-148)	The revised SEIS Nature Conservation and MNES Chapters will include information on springs from the surveys at Doongmabulla and Mellaluka springs (Refer to SEIS Volume 4 Appendix J3 Springs Ecological Assessment Report) and the revised groundwater and surface water modelling (Refer to SEIS Volume 4 Appendix K5 Revised Mine Hydrology Impact Assessment Report, and SEIS Volume 4 Appendix K1 Updated Mine Hydrogeology Report).
54	DNRM	Water resources	Groundwater - water supply	The EIS does not identify volumes of take (including indirect take) from each GAB formation.	Please include an estimate for take that includes indirect take and legacy volumes per annum from each formation that is hydrogeologically connected to the WRP area.	Volume 2 Section 6 General comment	Additional reporting on the potential impacts of the project on GAB water resources has now been included in Sections 5.6.7 and 5.7.5 of SEIS Volume 4, Appendix K1 Updated Mine Hydrogeology Report.
54	DNRM	Water resources	Relevant Legislation and Project Approvals	The Water resource (Great Artesian Basin) Plan 2006 also covers areas of the mine lease and should be included in the list of relevant legislation in Section 6.1.2	Include GAB WRP.	Volume 3 Section 6 6.1.2 Existing Environment (p. 6-2 – 6-22)	Legislation sections have been updated in the various SEIS appendices (refer to SEIS Volume 4 Appendix C1 Updated Approvals and Planning Assessment Report).
54	DNRM	Water resources	Relevant Legislation and Project Approvals	The Water Regulation 2002 needs to be included in 6.1.2 Water resources because it controls most of the groundwater regulation on the mine lease	Include Water Regulation 2002	Volume 3 Section 6 6.1.2 Existing Environment (p. 6-2 – 6-22)	Legislation sections have been updated in the various SEIS appendices (refer to SEIS Volume 4 Appendix C1 Updated Approvals and Planning Assessment Report).
54	DNRM	Water resources	Surface water	The station 333302 is really located near the centre point between the upstream and downstream boundaries, not near the downstream boundary as described. Could use downstream boundary of EPC 1690 to describe the location of this station.	Adjust the description of the location of monitoring station 333302 in the second paragraph of 6.1.5 to say approximately midway between the upstream and downstream boundary of the lease.	Volume 2 Section 6 6.1.5 Surface Water Sampling	Section 4.1 of SEIS Mine Hydrology Report Appendix K1 updated with revised description.
54	DNRM	Water resources	Correct reference/ cross reference	The further possible explanation of groundwater discharge to the river being predominantly from springs is not really supported by two other Adani reports; the springs report suggests 500 ML/a is discharging from springs and the Hydrogeological report suggests 15,000 ML/a is discharged from groundwater to the watercourses, thus implying there is considerably more groundwater discharge than from springs alone.	The statement should be qualified with evidence from the two other reports – the hydrogeological report and the Doongamabulla Springs report. Please cross reference these reports.	Volume 3 Section 6 6.2.3.1Overview	The EIS document was not updated however relevant information can be found in revised SEIS Volume 4 Appendix K5 Revised Mine Hydrology Impact Assessment Report, Appendix K1 Updated Mine Hydrogeology Report and Appendix J1 Revised Mine Ecology Report.
54	DNRM	Water resources	Correct reference/ cross reference	This reference to the National Land and Water Resources Audit (NLWRA) is not useful. Whilst some figures or quantities may be of some use from the audit for verification purposes, all regulatory regimes are implemented under Qld legislation and plans etc Any groundwater licences will have nothing to do with the Bowen UA, so that it is not relevant what the sustainable yield is in that classification.	Please also refer to the Burdekin catchment and tributaries and expected groundwater yields or extractions from the Highlands Declared Sub -artesian area.	Volume 2 Section 6 6.3.1.2 Groundwater flows	Comments are noted
54	DNRM	Water resources	Correct reference/ cross reference	The reference to the Bowen UA is not useful.	Please refer to catchment areas, and to relevant legislation where necessary	Volume 2 Section 6 6.3.5.2 Groundwater	Comments are noted

54	DNRM	Water resources	GDEs	This section on mitigation needs to also address monitoring of the GDEs affected on the Belyando and Carmichael rivers, including confirmation of groundwater gradients along those two streams and Regional Ecosystem vegetation mapping in those areas. There should be cross reference to the areas covered in the Nature Conservation report (eg Brigalow on the Carmichael River illustrated in fig 5.10) where potential GDEs are identified.	There needs to be a reference to the management of GDEs along the Belyando and Carmichael rivers, and to further groundwater monitoring to confirm upward gradients in those areas associated with waterholes with extended persistence. Reference the Nature Conservation report and how this information will be dealt with.	Volume 2 Section 6 6.4.4.3 Management, Mitigation and Monitoring Activities – Operation Phase	The revised SEIS Nature Conservation and MNES Chapters will include information on springs from the surveys at Doongmabulla and Mellaluka springs (Refer to SEIS Volume 4 Appendix J3 Springs Ecological Assessment Report) and the revised groundwater and surface water modelling (Refer to SEIS Volume 4 Appendix K5 Revised Mine Hydrology Impact Assessment Report, and SEIS Volume 4 Appendix K1 Updated Mine Hydrogeology Report).
54	DNRM	Water resources	Groundwater	The text here states there is potential for groundwater levels to be affected in some areas. Elsewhere e.g. Hydrology and Hydrogeology it is stated that a 3,000 ha void will remain which is up to 400 m deep. This means that there is absolute certainty that groundwater levels will be affected after closure. If groundwater flow is to the east from the GAB, it can be safely assumed that goafing and mine voids will result in significant increase in flow with resultant fall in hydraulic head in the eastward flowing GAB water with concomitant fall in GAB recharge.	This paragraph needs to be reworded so that it realistically reflects the hydraulics of post mine hydrology.	Volume 2 Section 6 6.4.4.4 Potential Impacts – Post- Closure Phase	Additional reporting on the potential impacts of the project on GAB water resources has now been included in Sections 5.6.7 and 5.7.5 of SEIS Volume 4, Appendix K1 Updated Mine Hydrogeology Report.
54	DNRM	Water resources	GAB Springs	"Minor impacts on groundwater levels at the two springs closest to the lease…" It is difficult to be convinced that the modelled impacts will necessarily accurately reflect what happens to drawdown at the springs given the complexity of such predictions. To extrapolate this to a "level of impact" on those springs is pure conjecture.	Provide further evidence that the proponent has measured the sensitivity of ecological components to changed hydrology within the springs?	Volume 2 Section 6 6.4.4.4 Potential Impacts – Post- Closure Phase	The revised MNES Report (SEIS Volume 4 Appendix H) and revised Mine Ecology Report (SEIS Volume 4 Appendix J1) will include information on potential impacts on springs from reduction in baseflow and drawdown. Revised groundwater and surface water modelling (Refer to SEIS Volume 4 Appendix K5 Revised Mine Hydrology Impact Assessment Report, Appendix K1 Updated Mine Hydrogeology Report and Appendix K6, Addendum to Mine Hydrogeology Report).
54	DNRM	Water resources	GAB Springs	Sentence structure is confusing "At the Mellaluka Spring site, however, predictions suggest ongoing drawdown post closure result in drawdowns of around 5 m at these springs in the long term although it should be stressed that predictions also suggest that significant impacts will not occur until around 60 years into the proposed life time of the mine". A 5m drawdown is not mitigated or affected by an impact delay of 60 years	Reword this sentence.,as follows: At the Mellaluka Spring site, however, predictions suggest ongoing drawdown post closure result in drawdowns of around 5 m at these springs in the long term. It should be stressed that predictions also suggest that significant impacts will not occur until around 60 years into the proposed life time of the mine	Volume 2 Section 6 6.4.4.4 Potential Impacts – Post- Closure Phase	The revised SEIS Nature Conservation and MNES Chapters will include information on springs from the surveys at Doongmabulla and Mellaluka springs (Refer to SEIS Volume 4 Appendix J3 Springs Ecological Assessment Report) and the revised groundwater and surface water modelling (Refer to SEIS Volume 4 Appendix K5 Revised Mine Hydrology Impact Assessment Report, and SEIS Volume 4 Appendix K1 Updated Mine Hydrogeology Report).
54	DNRM	Water resources	Hydrogeology - mine	"Backfilling of final voids to above pre-development groundwater levels." Additional text is required to qualify this sentence.	Add the following text to the end of the sentence "However, this strategy is limited because of the large amount of material (coal) exported from the site"	Volume 2 Section 6 6.4.4.4 Potential Impacts – Post- Closure Phase	Final landform has been revised for the SEIS and the Volume 4, Appendix K1 Updated Mine Hydrogeology Report has been updated accordingly. As stated in Section 5.7.1 the revised final landform includes 6 final void areas which will only be partially backfilled. The impacts of
54	DNRM	Water resources	Groundwater	"There is potential for further reductions in base flow to local surface watercourses." Given the 400m deep 3000 Ha void, how could baseflow not be affected?	Please replace with the following text There will be further reductions in baseflow…:	Volume 2 Section 6 6.4.4.4 – Potential Impacts – Post- Closure Phase	Baseflow reductions are predicted although as far as possible the groundwater modelling work undertaken for the project has been undertaken using a range of conservative assumptions such that the model is expected to over-estimate impacts in most cases. Actual impacts will inevitably vary from those predicted and there is an expectation that in general actual impacts will be less than those predicted. For instance it is possible that the Carmichael River in the Mine Area is already dis-connected from underlying groundwater resources. In which case there will be no additional impact on surface water flows. The language used in the SEIS is consistent with this uncertainty and therefore talks about likely impacts.
54	DNRM	Water resources	Correct reference/ cross reference	Inaccurate units referenced "around 1,00 m3/d or 7 per cent of pre-development base flows predicted."	Correct to 1,000 m3/d.	Volume 2 Section 6 6.4.4.4 – Potential Impacts – Post Closure Phase	This section has been updated with new groundwater modelling results. Refer to Volume 4 Section K1
54	DNRM	Project description	Correct reference/ cross reference	"Using the Resource Operational Plan (ROP) (supports the WRP)". The ROP provides the implementation framework for the WRP, rather than supporting the WRP.	Change wording to the following to accurately reflect the role of the ROP. The ROP provides a framework for implementation of the WRP.	Volume 2 Section 2 2.12.3.3 – Belyando River Flood Harvesting	Noted. Future wording to be changed to "The ROP provides a framework for implementation of the WRP'.
54	DNRM	Project Description	Water quality	"As MAW has higher electrical conductivity then the receiving environment, the proposed strategy for controlled discharges is to release MAW on high flow". Other primary contaminants of concern should also be listed here. Whilst it is appreciated that other docs may have these details, it is difficult for the reader to locate these, particularly with only scant reference given here to the other docs. It is known, for example that some groundwaters contain high levels of arsenic (hydrology report). It should also be noted that the proposed Adani mine will be established upstream of a major storage (Burdekin Falls dam), unlike mines in the Bowen Basin.	Add description of other main contaminants, and provide better cross referencing to other Adani documents on details stated here.	Volume 2 Section 2 2.12.5 Surface Water Discharges	In SEIS Appendix K3 Water Quality Report Water Quality Objectives have been established that need to be met for any water leaving the site. In dry or wet period.
54	DNRM	Project Description	Surface water	"In summary there is the potential to release an estimated average of 12,000 ML annually into the Carmichael River and 96,000 ML annually to the Belyando River under these conditions." These are large discharge volumes that need to be seen in the context of total discharges (either actual or estimated or both). It is noted that a gauging station has been set up in the Carmichael River. Mean annual flows in the Belyando R at Gregory development Rd significantly downstream of the mine are 657,000 ML, suggesting that 96,000 of MAW discharged into the river far upstream would be a considerable impost.	Please quote annual potential discharges in terms of existing river flows. Primary water chemistry concerns in addition to salinity should be documented here. This section should properly cross reference sections in the hydrology report and elsewhere. Some perspective on contaminant transport into the Burdekin Falls Dam also needs to be documented.	Volume 2 Section 2 2.12.5 Surface Water Discharges	Requested information is provided in SEIS Appendix K2 Water Balance Report.
54	DNRM	Project Description	Groundwater	Section 2.15.2.1, 2nd last paragraph, page 2-106. "Voids will remain dry due to evaporation of groundwater inflows." There needs to be better quantification of what the inflows are. This section needs to reference the hydrogeological report. Whilst this void remains dry it is noted that this is not the case for other Galilee Basin coal mines which have a much shallower voids and therefore potentially fewer inflow source aquifers and lower hydraulic gradient of inflows.	Document preliminary groundwater inflows to the mine void. Document evaporation estimation methodology and annual depth. Cross reference to appropriate sections of the Hydrogeology report.	Volume 2 Section 2 Section 2.15.2.1 – Open Cut Pits	Predicted groundwater inflows to the operational pits and underground mine workings and to post closure voids are quantified in SEIS Volume 4, Appendix K1, Updated Mine Hydrogeology Report. Annual evaporation depths are documented in Section 5.7.1 of this report

54	DNRM	Water resources	Hydrogeology - mine	"The Project (Mine) lies close to the eastern margin of the Great Artesian Basin (GAB)." The location of the project area in relation to the GAB should be included.	Correct the description of the project area in relation to the GAB boundary by adding the following text: …??although the GAB boundary runs through the mine lease in northern and central parts of the project.	Volume 4 Appendix R 2.2.3 – Hydrogeology Overview	The text discusses the location of the Project (Mine) in relation to the boundary of the GAB as defined by the various management units (GAB Eastern Recharge Groundwater Management Unit & Bowen Unincorporated Area) and plan areas (GAB Declared Sub-artesian Area and the Great Artesian Basin Water Resource Plan (GABWRP). The text of Volume 4 Appendix R
54	DNRM	Water resources	Hydrogeology - mine	"None of the main GAB aquifer units are understood to be present within the EPC 1690 or EPC 1080". The proponent should note however, that dewatering licences may be required from the GAB given the overlap of the GAB boundary with the mine lease	The EIS should identify any requirements for dewatering licences.	Volume 4 Appendix R 2.2.3 – Hydrogeology Overview	Dewatering licences are discussed in Volume 4 Appendix R 3.6 Groundwater Related Licensing and Permits Relevant to the Project (Mine). Text in this section has therefore been revised, (rather than added into Volume 4 Appendix R 2.2.3 – Hydrogeology Overview) to say licences for the take of water may be required under the GAB Water Resource Plan and/or Resource Operation Plan given the proximity of the Mine Area to the Clematis Sandstone
54	DNRM	Water resources	Hydrogeology - mine	"No direct impacts on any GAB aquifer units are anticipated". The proponent has predicted some watertable drawdown impacts on springs within the GAB boundary. These impacts are direct enough. In many modelling exercises, impacts of groundwater pumping or reduced groundwater pressures are felt through aquitards. The proponents own results in Figure 5.6 suggest impacts will be greater to the west of the mine (in the GAB) than to the east (Galilee Basin)	Reword sentence to the following: …??some impacts could be expected on GAB aquifer units.	Volume 4 Appendix R 2.2.3 – Hydrogeology Overview	The text of the SEIS Volume 4 Appendix K1 Updated Mine Hydrogeology Report 2.2.3 – Hydrogeology Overview has been revised to remove reference to impact on GAB aquifer units as this section is not about potential impacts. Potential impacts on GAB aquifers are discussed in Volume 4 Appendix K1 Section 5.6 Model Predictions.
54	DNRM	Water resources	Rail Hydrogeology Report_Final	The WRPs are then activated through related ROPs. This statement is incorrect.	Reword to the following The ROP provides a framework for implementation of day to day management activities under the WRP	Volume 4 Appendix AC 1.4.1 Water Act 2000	Noted and included under the revised Mine Hydrogeological Report, Volume 4 Appendix K1.
54	DNRM	Water resources	Hydrogeology - mine	"However, no aquifers managed under the GAB WRP are present within the Project (Mine) site and hence no direct extraction from such aquifers for dewatering or other purposes is proposed as part of the Project. The permitting requirements under the GAB WRP and ROP are therefore not considered to be relevant in this case." Elements of this paragraph are incorrect.	Delete this paragraph.	Volume 4 Appendix R 3.6 Groundwater Related Licensing and Permits Relevant to the Project (Mine)	Dewatering licences are discussed in Volume 4 Appendix R 3.6 Groundwater Related Licensing and Permits Relevant to the Project (Mine). Text in this section has therefore been revised, (rather than added into Volume 4 Appendix R 2.2.3 – Hydrogeology Overview) to say licences for the take of water may be required under the GAB Water Resource Plan and/or Resource Operation Plan given the proximity of the Mine Area to the Clematis Sandstone
54	DNRM	Water resources	Hydrogeology - mine	"For instance tests undertaken on the Rewan Group within the site suggest a relatively high median hydraulic conductivity of 2.3x10-2 m/d." Despite the fact that the Rewan is generally of low hydraulic conductivity, it is also well known that groundwater pumps are operational within the Rewan. Clearly Rewan hydraulic properties are site specific. The number of local tests should be documented here as part of the discussion. Local values should be preferably used in any modelling exercise.	Ensure locally derived values of hydraulic conductivity are used in modelling the Rewan.	Volume 4 Appendix R 4.6 Aquifer Properties	As discussed in Sections 5.5.2 and 5.5.3 of the SEIS Volume 4 Appendix K1 Updated Mine Hydrogeology Report the adopted calibration approach which uses site derived initial values but regional and/or literature values to define upper and lower bounds for model calibration purposes is considered to be optimal. One of many alternative approaches would have been to only allow parameters to vary within the range of hydraulic conductivity values 'observed' on the mine area. However, adopting this alternative approach would have had little or no impact on the overall modelling results. Only two calibrated hydraulic conductivity values fall outside the range of 'observed' site data. If the modelled parameters had been constrained by the site data then this would have resulted in an un-realistically low modelled value for the Quaternary Alluvium and a very slightly higher value for the Rewan Group. Sensitivity analysis results suggest in particular that this type of minor revision to the K value for the Rewan Group would have no material impact on predictions. In addition to increasing the model calibration error adopting the unrealistically low hydraulic conductivity values suggested by the site data for the Quaternary Alluvium would tend to reduce predicted impacts.
54	DNRM	Water resources	Hydrogeology - mine	It is noted that the values of K for the Rewan are much lower than site measured values. There needs to be some justification of use of such a low value. Initial value is 1×105 m/d and site measured value is 2.3×10-2 which is three orders of magnitude lower.	Use a higher value of K for the Rewan as determined from site tests or provide better justification of use of such a low value.	Volume 4 Appendix R 5.5 Model Calibration - Table 5.4	See response 54BC. Please note also that additional site specific data for the Rewan Group is now available which indicates a lower bound hydraulic conductivity value for the Rewan of 9.5x10-5 m/d. The revised model calibrated value for the Rewan is 7.4x10-5 m/d and is therefore only slightly below the minimum 'observed' value for the site and well above the 95th percentile value of 2.0x10-7 m/d calculated using regional data for this strata (QWC, 2012).
54	DNRM	Water resources	Hydrogeology - mine	Given that the predicted reduction of baseflow is only 7 per cent, it is difficult to see how this result agrees with the field data on measured hydraulic gradients. The measured gradients from bores 25 and 27 showed hydraulic head differences of only a meter or two between river and aquifer. Figure 5.10 suggests a decline in head of 20 m in the aquifer. This would reverse the gradient to downward nearly all of the time one would think. At times of high rainfall head in the river would be expected to be higher than at other times, thus providing reduced opportunity for upward gradients.	There needs to be better explanation on how these results fit with the field data on measured hydraulic gradients.	Volume 4 Appendix R 5.7.4 Baseflow impacts	Predicted baseflow impacts have now been revised as summarised in Section 5.6.7 of the SEIS Volume 4 Appendix K1, Updated Mine Hydrogeology Report. Results suggest a reduction in baseflow upstream of the site and increased baseflow losses across the site. Predictions are considered to be consistent with available data on hydraulic gradients and observed flow data.
54	DNRM	Water resources	Correct reference/ cross reference	Figure 5-11 should be figure 5.10	Reword to 5.10	Volume 4 Appendix R 5.7.4 Baseflow impacts	noted
54	DNRM	Water resources	Hydrogeology - mine	"actual hydraulic conductivity of the Clematis Sandstone was 10 times higher than the calibrated value". What about the sensitivity to the primary aquitard, the Rewan. Are springs affected if field derive values of K are used for the Rewan?	Discuss the impacts on the springs using field measured values of K for the Rewan. Discuss the potential impacts on springs using field derived values of K.	Volume 4 Appendix R 5.8.2 Discussion of results	See response to 54BC and 54BD. The revised model calibrated value for the Rewan is 7.4x10-5 m/d and is only slightly below the minimum 'observed' value for the site of 9.5x10-5 m/d and well above the 95th percentile value of 2.0x10-7 m/d calculated using regional data for this strata (QWC, 2012). Furthermore, the sensitivity of model predictions to modelled hydraulic conductivity (K) values for the Rewan Group has been assessed. Increases in the modelled K of up to 10 times have been considered. Results suggests that predicted impacts on the springs are relatively insensitive to this parameter and suggest that impacts would be increased by less than 0.04 if the modelled K for the Rewan was increased by a factor of 10 to 7.4x10-4 m/d (i.e. around 8 times higher than the minimum observed site value).

54	DNRM	Water resources	Hydrogeology - mine	"The results also suggest that higher post closure impacts of up to around excess of 10 m (i.e. around 5 m higher than the predictions made using the calibrated parameter set) could occur at the springs if the actual hydraulic conductivity of the older Permian units was 10 times higher." These results suggest a very high level of uncertainty in the model predictions and impacts on springs.	Further modelling is required to reduce the level of uncertainty in themodel.	Vol 4, Appendix R, Section 5.8.2	Parameter sensitivity should not be confused with uncertainty. Predicted impacts at the Mellaluka Springs are relatively sensitive to a number of parameters. However, for the most part the model calibration is also relatively sensitive to these same parameters, which suggests that significantly higher conductivity values than those calibrated are in-consistent with the available observed groundwater level data used for calibration. Furthermore, irrespective of the amount of modelling work done, given the proximity (lateral and vertical) to the Mine Area predicted impacts at these site will remain relatively sensitive to the properties of the Permian-age and overlying Tertiary-age strata (i.e. this sensitivity is considered likely to be irreducible). This serves to highlight need for post development monitoring to confirm predicted impacts.
54	DNRM	Water resources	Hydrogeology - mine	"Potential evaporation from the voids exceeds groundwater inflows and hence the voids are expected to remain dry." There does not appear to be enough confidence in the modelling to make this assertion, and not enough information provided for the reader to assess mine voids. It is noted that other Galilee Basin coal mines expect groundwater to remain in the pits, and that these use shallower pits than the proponent and therefore access a smaller groundwater cross section for inflow and have lower hydraulic gradients into the pits. This would suggest that the Carmichael pits will have relatively high inflow rates.	Comment on sensitivity of this result to model parameter selection, and other issues that have resulted in low groundwater ingress to the pits.	Vol 4, Appendix R, Section 8.2	A detailed sensitivity analysis has been undertaken an is reported in Section 5.8 of the SEIS Volume 4, Appendix K1, Updated Hydrogeology Report. It should be stressed that other than initial values and permissible values to be used during the model calibration no parameters have been selected as such. Calibration was undertaken using an automated and hence objective optimisation tool. The relatively low predicted inflows are considered to be consistent with the relatively low hydraulic conductivity values returned by the majority of the tests undertaken in the Mine Area. The sensitivity of predicted inflows to a range of parameters is discussed further in Section 5.8.2.
54	DNRM	Water resources	Hydrogeology - mine	"Potential evaporation from the voids exceeds groundwater inflows and hence the voids are expected to remain dry." What is the method used to calculate evaporation from the pits and what is the depth of annual evaporation?	Document methodology for calculation of evaporation, and what the calculated depth of evaporation is.	Vol 4, Appendix R, Section 8.2	Documented in Section 5.7.1 of the SEIS Volume 4, Appendix K1, Updated Hydrogeology Report.
54	DNRM	Water resources	Hydrogeology - mine	"Potential evaporation from the voids exceeds groundwater inflows and hence the voids are expected to remain dry." Have impacts of stratigraphic cracking from goafing been included in the modelling. If so, what increase in flows to pits has the goafing caused?	Comment on quantitative impacts of goafing	Vol 4, Appendix R, Section 8.2	Simulation of goafing in described in Section 5.6.3 of the SEIS Volume 4, Appendix K1, Updated Hydrogeology Report. Predicted impacts with and without simulation of goafing are described in Section 5.8 and suggest that less than 4% of predicted impacts can be attributed to enhanced fracture in the zone overlying the proposed underground mining areas.
54	DNRM	Water resources	Hydrogeology - mine	"Potential evaporation from the voids exceeds groundwater inflows and hence the voids are expected to remain dry." The groundwater inflows to the pits need to be quantified. The groundwater flows from GAB groundwater into the pits should also be quantified	Quantify total groundwater inflows. Also quantify groundwater inflow from the GAB to the pits, and any other post mine GAB flows.	Vol 4, Appendix R, Section 8.2	Predicted inflows to the proposed open pits and underground workings are now documented in Sections 5.6.5 of the SEIS Volume 4, Appendix K1, Updated Hydrogeology Report and GAB water resource impacts in Section 5.6.7. Post closure inflows / impacts are summarised in 5.7.3 and 5.7.5.
54	DNRM	Water resources	Hydrogeology - mine	Have the impacts of evaporation from mine voids been included for the operational phase of the project?	State whether impacts of pit evaporation have been included in the operational phase modelling.	Vol 4, Appendix R, Section 8.2	Predicted inflows to the proposed open pits and underground workings are now documented in Sections 5.6.5 of the SEIS Volume 4, Appendix K1, Updated Hydrogeology Report and GAB water resource impacts in Section 5.6.7. Post closure inflows / impacts are summarised in 5.7.3 and 5.7.5. Inflow predictions provided in the Hydrogeology Report do not currently take account of evaporation from pit faces, sumps etc as the volume of these losses will depend to a large extent on the dewatering system design which is unknown at this EIS stage. Further information is provided in SEIS Volume 4 Appendix K6 Addendum to Mine Hydrogeology Report.
54	DNRM	Water resources	Groundwater	In general, groundwater discussion in Chapter 6 does not adequately summarise the complexity of the groundwater system and the potential groundwater impacts identified in Appendix R – Mine Hydrogeology Report, particularly for the mine site itself. For example, Section 6.2.3.2 - Groundwater Levels and Gradients discusses the groundwater in the uppermost aquifers and their relationship to the surface water streams. It does not discuss the groundwater levels of the lower aquifers and the relationship between aquifers, which under mining significantly alters the hydrogeology and are identified as a significant impact. There is limited discussion on the hydrogeology of the area and description of groundwater aquifers in the area. This makes the section difficult to understand, particularly when there is significant reference to individual aquifers throughout the section.	Chapter 6 requires a relevant summary, review and inclusion of hydrogeological information from Appendix R – Mine Hydrogeology Report.	Vol 3, Section 6	The updated Hydrogeology Report (SEIS Volume, Appendix K1) provides an update of modelling outcomes and summary of results.
54	DNRM	Water resources	Groundwater	There is no mention of groundwater Sub Artesian Areas, particularly the Highlands Subartesian Area.	Include discussion regarding Sub Artesian Areas.	Vol 2 Section 6.1.2	Please refer to SEIS Volume 4 Appendix K1 Hydrogeology Report Section 3.4 and Section 3.5 for information on declared sub artesian areas.
54	DNRM	Water resources	Groundwater - water supply	In paragraph 2, the final sentence identifies a larger borefield proposed for the mine. There appears to be no further discussion of a proposed borefield to service the mine in the EIS.	Clarify statement regarding a proposed borefield to service mine water supply.	Vol 2 Section 6.3.5.2	As stated in Section 7.1 of the SEIS Volume 4, Appendix K1, Updated Hydrogeology Report water demand for the operational mine will be met from a combination of dewatering, stored surface water and water imported from off site. Further information is provided in SEIS Appendix K2 Water Balance Report.
54	DNRM	Water Resources	Groundwater	The last sentence in the 2nd paragraph on p6-113, states 'Where this eastward flow direction is confirmed by further monitoring then no impacts on the GAB groundwater resources would occur as a result of dewatering' There appears to be limited justification for this statement in Appendix R – Mine Hydrogeology Report. Also this is based upon a limited data set extent of groundwater levels monitored in the Clematis Sandstone, particularly west of the mine site. Regional flow in the Clematis Sandstone is to the southwest in line with the dip of the Clematis. It is unusual to have groundwater flow directions different to regional flow direction and dip. This relationship needs further investigation.	Provide justification for this statement or consider revising.	Vol 2 Section 6.4.4.2	Available information and groundwater level modelling suggests generally eastward groundwater flow from the GAB units into the adjacent Belyando catchment. This suggests that topography, rather than the dip of the geological strata represents the main control on groundwater flow directions. Similar flow patterns can be seen elsewhere in the GAB. At the local scale groundwater flow in the GAB is not always down dip.
54	DNRM	Water resources	Groundwater	The Chapter does not identify the proposed commitments detailed in Chapter 10 – List of Proponent Commitments, in regard to the groundwater monitoring or the Groundwater Management Plan. This is an important component of the ongoing management, mitigation, monitoring and review of the groundwater behaviour and the model.	Provide more detail in this chapter regarding proposed groundwater management and monitoring activities.	Vol 2 Section 6.4.4.3	Please refer to SEIS Volume 4 Appendix K1 Hydrogeology Report for mitigation and monitoring measures Section 7.6.
54	DNRM	Water resources	Hydrogeology - mine	The 2nd paragraph makes reference to Highlands Sub Artesian Area being mentioned in section 3.3. No reference is made to Highlands Sub Artesian Area in Section 3.3.	Review and cross check reference.	Vol 4, Appendix R, Section 3.5	Noted. Text in Volume 4, Appendix K1, Section 3.5 has been amended to reference Section 3.4 (as opposed to Section 3.3).

54	DNRM	Water resources	Hydrogeology - mine	The Permian Coal Measures within the Bandanna Formation typically comprise a varied sequence of sandstones, siltstones, mudstones and coals. Primary porosity and permeability in each of these units is typically low and hence yields are generally governed by the degree to which secondary porosity and permeability has developed. Experience at locations within the nearby Bowen Basin suggests that coal seams are often the highest yielding and most permeable part of the sequence. This probably reflects the relatively low strength and hence high fracture potential of the coal seams, in comparison to other units present. Yield estimates from short periods of airlifting (1 to 2 hours in length) conducted on the Project (Mine) groundwater monitoring network installed in coal seams ranged from <0.1 to 1.0 L/s (with a mean of 0.2 L/s and median of 0.12 L/s) and suggests that in general, relatively low yields should be anticipated from the coal seams. No publically available information on groundwater yields which can be attributed to Permian-age units within the Study Area was identified in the desktop review which suggests that the Bandanna Formation and/or the Colinlea Sandstone do not represent a locally important water resource.	Further investigation of the interburden aquifers based on southern Galilee evidence should occur and be discussed. It is noted that southern Galilee mines found significant supplies in DE sands at times and should be more relevant than Bowen Basin context used.	Vol 4, Appendix R, Section 4.2.4	Available data for the site suggests predominantly very low hydraulic conductivity values for all units tested including sandstone units. With reference to Section 4.6.1 of the SEIS Hydrogeology Report (Volume 4, Appendix K1). The median hydraulic conductivity for the different Permian-age strata tested vary between 9.5x10-3 m/d for the D Seams to 1.3x10-3 m/d for the 'interburden' units between the AB and D seams 9 i.e. are relatively similar). For Permian-age strata, testing suggests no apparent difference between tests undertaken in adjacent sandstone and siltstone units although relatively high hydraulic conductivity values were recorded for sandstone units between or immediately below some of the main coal seams.
54	DNRM	Water resources	Hydrogeology - mine	No discussion on the groundwater levels and gradients in the Rewan, Permians and Coal seams. It is noted that based on Figures 4-9 to 4-12 there is very similar heads in these aquifers and similar flow directions. It is also interesting to note what appears to be a groundwater sink to the north of the river in all aquifers. This evidence needs further analysis and discussion.	Further discussion must be provided regarding groundwater flow and levels for all aquifers.	Vol 4, Appendix R, Section 4.7.2	Volume 4, Appendix R, Section 4.7.2 has been updated with additional discussion on vertical gradients (see SEIS Hydrogeology Report Volume 4, Appendix K1). In summary groundwater level data indicate 1. Upward gradient from D seam to AB seam, D seam to interburden and AB seam to overburden (south and central parts of Mine Area). 2. Downward gradient from interburden to D seam, overburden to AB seam, AB to D seam (northern parts of Mine Area). 3. Downward gradient from Dunda Beds to underlying Permian-age strata (western parts of Mine Area). 4. Predominantly downward gradient from Rewan Group to underlying Permian-age strata. 5. Downward gradient within Rewan Group.
54	DNRM	Water resources	Hydrogeology - mine	Groundwater recharge appears to be minimal. Analysis of nearby bore hydrographs from the Queensland Bore Database (DNRM) and data for monitoring network bores installed within the lease show little fluctuation in groundwater levels (based on two to four records per year), including during wetter periods in the late 1970s and early 1980s. Typical recharge peaks are in the order of 0.2 m, but occur relatively infrequently and may represent a response to higher rainfall periods that is lagged and attenuated over multiple years if not longer. This section overall appears to be very generalised.	This section needs further discussion by aquifer. There are significant rises in water level that occur in bores C027 and C029 alluvial, Tertiary and Dunda Beds – refer to charts 14 and 15 in Appendix D. The proponent also needs to check the elevation of water levels in Chart 15 with the elevations on Figure 4-7.	Vol 4, Appendix R, Section 5.3.2	Please refer to section in the SEIS Volume 4 Appendix K1 Revised Hydrogeology Report, Section 4.8 (Groundwater Recharge). More discussion has been included. The text discusses recharge mechanisms and estimated quantities for each of the various strata / groups of strata, including observed groundwater level fluctuations for the site monitoring network.
54	DNRM	Water resources	Hydrogeology - mine	Sentence in paragraph 6 notes that the groundwater model assumes disconnection of the groundwater and river where a downward gradient is calculated based on two sites over a 3 month period with no stresses placed on the groundwater system. This assumption appears to conflict with the evidence provided in Section 4.3.4 regarding potential gradients between the aquifers and the river as well as Section 4.7.1 – Overview, identifying a potential gradient, water quality similarities and groundwatersurface water interactions (gains and losses) to the river.	The assumption in the model needs further review and potential model reassessment regarding base flow impacts based on evidence provided.	Vol 4, Appendix R, Section 5.6.4.3	Simulation of interaction between the Carmichael River and underlying groundwater resources has been revised for the SEIS. The groundwater model summarised in the SEIS Volume 4, Appendix K1, Updated Mine Hydrogeology Report now simulates surface water - groundwater interaction along the Carmichael River using the MODFLOW stream package (see Section 5.4.2). This package allows more sophisticated simulation of SW-GW interaction and dis-connection of GW - SW resources is no longer assumed. Model results suggest a degree of connection under current conditions and hence modelled impacts suggest both reduced baseflow upstream of the Mine Area and increased flow losses across the site post development (see Section 5.6.7).
54	DNRM	Water resources	Hydrogeology - mine	The groundwater model predicts minor indirect impacts to the Great Artesian Basin (GAB) aquifers. Considering the limited data, potential head gradient between the mined aquifer and the GAB aquifers as well as the uncertainty of the impact of mining operations, particularly the potential fracturing associated with 'goafing' in the Rewan and the nearby GAB sourced springs, the groundwater monitoring plan should consider additional long term monitoring in GAB aquifers.	Existing groundwater monitoring sites in the Clematis Sandstone need to be reviewed and additional sites need to be considered in the revised Groundwater Monitoring Plan.	Vol 4, Appendix R, Section 7.8.3	Groundwater monitoring has been installed between the Mine Area and Doongmabulla springs and also being installed at 3 sites along the western boundary of the Mine Area into the Dunda Beds of the GAB (refer SEIS Hydrogeology report Section 2.3.3, Section 7.6.4). Baseline monitoring is detailed in Section 7.6.4 - baseline monitoring of groundwater to continue and the data used in the development of trigger levels for monitoring during operation. The EMP will detail the longer term monitoring plan.
54	DNRM	EMP - Mine	Groundwater	Table 13-56 Groundwater design and Pre Construction Controls 1st Control identifies an update of the groundwater model. Further clarity is required on what an 'update' will include.	Amend wording under Control to include 'Review adequacy of existing model, including conceptual model, update groundwater model to include additional information on groundwater and geology obtained from monitoring programs and assessments'. Amend 'Evidence' to include Revised model and report.	Vol 2, Section 13.20.5	Noted. The groundwater monitoring and modelling will be finalised with DNRM consultation. The existing controls include provision to accommodate this request. Please refer to SEIS Volume 4 Appendix Q1 for the revised Mine EMP.
54	DNRM	Water resources	Groundwater	The impacts as a result of dewatering the pits are not well detailed. In addition, references to groundwater impacts in relation to geological units are not meaningful without sections showing the stratigraphic section.	A map showing the extent and degree of drawdown should be provided. In addition, appropriate diagrams and stratigraphic sections need to be included in this section to adequately reflect what the findings are.	Vol 2, Section 6.4.4 and 6.4.4.2	Noted.
54	DNRM	Land	Topography, geology and soils	In general, although the geological consistency in the Galilee Basin sequences supports a lesser frequency of sampling than would normally be required by the Guideline, it could be argued that the number of drill holes and samples upon which the study is based is insufficient. Also the sampling frequency per lithological unit has been based on the lengths of particular lithological units in the core of the small number of drill holes rather than the volumes of particular lithologies to be encountered in the mining operation. Consequently, some lithologies may be under sampled and their potential for acid formation inadequately characterised.	Justify the sampling frequency used to characterise the geological sequences.	Vol 4, Appendix V, Mine Waste, Acid and Metalliferous Drainage and Dispersive Materials Assessment	DNRM has requested that Adani justify the sampling frequency used to characterise the geological sequence in the Galilee Basin. The sampling frequency has been addressed in the Updated Waste Characterisation Report (refer to SEIS Volume 4 Appendix O1)
54	DNRM	Project description	Mine Planning	The mine plan appears to be very conceptual in that it shows pits and mine waste dumps as squares and triangles. Also, the mining is thought to be likely to be more extensive than is shown.	The mine concept plan needs to be more reflective of the actual on ground mine plan.	Vol 2, Section 2, Figure 2.14	A revised mine plan has been developed for the SEIS.

54	DNRM	Land	Land Use and tenure	The draft EIS states that the project rail does not traverse any land that is subject to a Mining Lease of Mineral Development Licence. The acquired digital data for the rail footprint indicates that the rail line will cross the north east corner of MDL 391 (Diamond Creek). Although it does not look like the underlying resource will be impacted by the proposed rail line, the holder of the granted MDL must be consulted regarding the proposal.	Confirmation is required as to whether the MDL in question is actually traversed by the proposed rail line. If the MDL is traversed by the proposed rail then the tenure holder needs to be consulted to ensure it will not impact on their future operations, and any requirements outlined in the Mineral Resources Act 1989 regarding construction on a granted Mining Tenure will need to be adhered to.	Vol 3, Section 4.4.2.16	The rail alignment will traverse MDL 391 and consultation between Adani, DNRM and the relevant tenure holder will be undertaken. Adani will comply with the requirements outlined in the Mineral Resources Act 1989 regarding construction on a granted Mining Tenure.
54	DNRM	Land	Land Use and tenure	Table 4-30 provides a list of mining tenures that are located near the proposed rail line and Figure 4-10 shows mining tenures traversed directly by the project rail. The tenures listed in this able and illustrated in the figure are accurate and current for Exploration Permits for Coal (EPM) and Exploration Permits for Petroleum (EPP) (Authorities to Prospect). However, in addition to these tenures, there are an additional ten Exploration Permits for Minerals (EPM) that are not mentioned in this section of the draft EIS. Of these ten tenures, four are currently in application stage with the other six granted. The impact of the proposed rail line on these tenures must be considered by the proponent and therefore should be included in any table/figure that shows current tenures.	Table 4-30 and Figure 4-10 need to be updated, or an additional table and figure should be provided, that includes the EPMs that will be impacted by the proposed rail line. These tenure holders also need to be considered stakeholders throughout the EIS process and should be consulted with appropriately.	Vol 3, Section 4.4.2.16	The Mining and Petroleum Tenure figure and table have been updated to include the EPMs that will be traversed by the rail corridor. Consultation between Adani, DNRM and the relevant tenure holder will be undertaken. (SEIS Volume 4 Appendix B)
54	DNRM	Land	Land Use and tenure	As mentioned in previous comments, there is no mention of the EPMs that will be impacted by the development of the proposed rail line. Table 2.3 and Figure 2.5 do not mention any EPMs that will be traversed by the proposed rail line and therefore are incomplete.	Table 2.3 and Figure 2.5 need to be updated, or an additional table and figure should be provided, that includes the EPMs that will be impacted by the proposed rail line. These tenure holders also need to be considered stakeholders throughout the EIS process and should be consulted with appropriately.	Vol 4, Appendix Z, Section 2.4.3	Refer to comments on issue 54CD The Mining and Petroleum Tenure figure and table have been updated to include the EPMs that will be traversed by the rail corridor. Consultation between Adani, DNRM and the relevant tenure holder will be undertaken. (SEIS Volume 4 Appendix B)
54	DNRM	Land	Land Use and tenure	This appendix provides the results of a study regarding the resource potential of the areas traversed by the proposed rail line. The study is based on publically available data through the IRTM and QDEX systems, and looks at mineral, coal and petroleum prospectivity. The data available to the public though the QDEX system in particular is limited due to the confidentiality of recent and current submissions. Therefore the results of this study should be coupled with consultation with current Exploration Permit holders to ensure the information is as complete as possible.	Due to the high number of exploration permits in the area, as well as known mineral occurrences in close proximity to the proposal area, the holders of current permits should be consulted to ensure that any sterilisation of potential resources is minimised.	Vol 4, Appendix Z, Zenith Rail Easement Study	Consultation between Adani, DNRM and the relevant tenure holders will be undertaken throughout the EIS process.
54	DNRM	Project description	Mine Planning	While acknowledged that mine development is often accompanied by continued refinement of resource/reserve calculations and mine planning in response to that, some of the investigations cited as being progressed in parallel with mine development are considered pre-requisites to the approval for mine development being granted eg hydrology and coal quality studies are fundamental to the design of the project and should be substantially advanced by the end of the EIS process.	Ensure that an appropriate level of data and analysis on technical matters relevant to resource extraction and processing, mine design, geotechnical issues, hydrology, etc will be provided to enable confidence that the project can be designed and operated satisfactorily.	Vol 2, Section 2.3	A revised mine plan has been developed for the SEIS. This mine plan has been used to draft the revised flood modelling (SEIS Volume 4 Appendix K4) and subsidence assessments (SEIS Volume 4 Appendix I1).
54	DNRM	Project description	Mine Planning	This section discusses a Macro-Conceptual Mining Study (Runge 2011). This should form an attachment to the EIS although it may contain commercial-in-confidence information. Similarly a 2009 report by Xenith could also add value if attached. The explanation of the mine development concepts is generally accepted but further detail will be needed on specifics relating to the coal extraction thicknesses in the proposed dual seam longwall operation in the AB1 and D1 seams, and the resultant surface subsidence expected from this mining. Importantly, it is expected that a single pass longwall in relatively thick seams (with or without Top Caving being used) will leave a lot of coal behind. Technical issues likely to be expected in a dual seam longwall mine working to depths of 500 m below surface will also need to be referenced. Query whether company can justify quoting a JORC compliance resource (indicated + inferred) of 7.8 billion tonnes to 500 m depth based on 47 drill holes spaced approximately 4 km apart.	Provide an appropriate level of detail to address the issue.	Vol 2, Section 2.4	A revised mine plan has been included within the SEIS (see SEIS Volume 4 Appendix B).
54	DNRM	Project description	Coal Handling and Processing	Description of the coal washery process does not refer to input materials and quantities (heavy medium or magnetite, chemicals, water demand etc).	Provide details of input materials and annual consumption estimated.	Vol 2, Section 2.8.4	Noted. Adani will liaise with DNRM o discuss the requirements of the Strategic Cropping Land Act 2011. Please refer to SEIS Volume 4 Appendix T1 in regards to updated SCL assessment.
54	DNRM	Project description	Coal dust management	Coal loadout facilities – expect that profiling and veneering of the coal surface in the rail wagons will be done to minimise/eliminate coal dust lift-off during transit.	Indicate dust control procedures.	Vol 2, Section 2.8.5	Noted. Coal dust will be managed in accordance with the project (Rail) EMP. Refer to SEIS Volume 4 W EMP).
54	DNRM	Project description	Coal Handling and Processing	This section describes waste/spoil placement strategy but geochemical characterisation of waste materials, especially coal rejects and roof and floor materials will be critical in predicting and managing any potential for acid generation.	For noting	Vol 2, Section 2.8.6	Noted.
54	DNRM	Project description	Relevant Legislation and Project Approvals	Pre-construction – report states that company will undertake a range of preconstruction activities under the authority of the Level 1 EA held for their Exploration Permit . It needs to be acknowledged that the EPCs themselves establish the level and type of activities that are authorised upon them and it really is exploration activities only. The proponent may have the ability to do some things on the land as the owner of Moray Downs provided they are as of right under the local planning scheme and are not “mining-related”.	For noting.	Vol 2, Section 2.9	Noted.
54	DNRM	Project description	Rehabilitation	This section predicts that final voids left after open cut mining will remain dry, meaning that they will be permanent, long-term sinks in the regional groundwater surface as inflows of groundwater will evaporate. The significance of this regionally needs to be discussed. As well, what ecological conditions/micro-climates might exist on the floor of final voids (400 m below normal surface), particularly at the base of the high wall, and could it provide valuable habitat for native flora and fauna?	Undertake some predictive assessment of the form that rehabilitation could take on a cross-section from east to west across a mined open cut area, showing the out of pit dump, battered low wall, void floor, battered high wall and natural surface. Also provide an assessment of vegetation communities and habitats expected to develop over time in each segment.	Vol 2, Section 2.15	Rehabilitation of final voids will be undertaken in accordance with the revised rehabilitation plan prepared for the project. Refer to SEIS Volume 4 Appendix R1 Closure and Rehabilitation Management Strategy - Mine for more information.

54	DNRM	Land	Topography, geology and soils	An assessment of the soil and land suitability has only been completed for areas within EPC 1690. No soil and land suitability assessment has been completed for areas within EPC 1080 and the MIA	Conduct a soil and land suitability assessment of areas contained within EPC 1080 and the MIA at a scale of 1:100 000 following the standards of the Land Suitability Assessment Techniques in the Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland (DME, 2010)	Vol 2, Section 4.2.3.4	A soil survey and soil and land suitability assessment will be undertaken for the Project. This assessment will include the areas contained within EPC 1080 and the MIA. This assessment has been included within the SEIS Project Commitments (refer to SEIS Volume 4 Appendix G section 2.3.3).
54	DNRM	Land	Topography, geology and soils	Table 4-19 Soil reuse recommendations for Project (Mine) onsite infrastructure area EPC 1690 details the recommended single stage stripping depth of each soil type identified. Soil types GC2, Lb1 and Lb2 only reflect the minimum depth of soil suitable for stripping. The soil depth of these soils varies from 40 cm to 1.2 metres. Restricting the stripping depth to 40 cm would reduce the volume of soil suitable for rehabilitation in some areas.	The stripping depth of these soils should be identified as depth to rock, as there are no physico/chemical limitations in the soil profile.	Vol 2, Section 4.2.4.2	DNRM comments regarding stripping depths have been noted. DNRM are correct in assuming that in some specific locations the depth of 'useable soil' will be greater than 40 cm. However, the depth to underlying rock will vary considerably and maybe (probably) over short distances. The actual distribution or variability of this depth could not possibly be determined accurately due to the mapping scale used in the EIS. The 40 cm depth used in the EIS was used as a conservative indicative depth only, and if the actual variability needs identifying and mapping for specific areas then more detailed work will be undertaken. This can be undertaken for each development stage as the mine progresses.
54	DNRM	Land	Topography, geology and soils	The soil survey results for EPC 1690 are shown in Figure 1 sheets 1 to 3. The location of boreholes assessed during the mapping phase have not been shown in the figures.	Spatially display the location of boreholes over the soil mapping.	Vol 4, Appendix L, Section ?? Soils Assessment Report	Comments regarding borehole locations have been noted and the relevant figures have been updated and included in the SEIS (refer to SEIS Volume 2 Section 4 Land - Mine).
54	DNRM	Land	Topography, geology and soils	Broadscale soil mapping has been provided in the EIS. It is noted that a more detailed assessment will be provided in a supplementary SEIS.	Provide a more detailed soil assessment as per the TOR.	Vol 4, Appendix Y, Rail Soils Assessment	A soil survey will be undertaken for the Project (Rail). A soil survey methodology has been prepared and will be submitted to DNRM prior to undertaken the assessment (refer to SEIS Volume 4 Appendix T2 Soil Survey Methodology - Rail).
54	DNRM	Land	Topography, geology and soils	It is noted that strategic cropping land will be impacted by the proposed rail corridor, and as such the requirements under the Strategic Cropping Land Act 2011 framework will be investigated further.	Please consult with the Strategic Cropping Land unit within DNRM to discuss the requirements of the Strategic Cropping Land Act 2011.	Vol 4, Appendix Y, Rail Soils Assessment	Noted. Adani will liaise with DNRM o discuss the requirements of the Strategic Cropping Land Act 2011. Please refer to SEIS Volume 4 Appendix T1 in regards to updated SCL assessment.
54	DNRM	EMP - Mine	Soils and erosion	The Environmental Management Plans lack specific detail as to how resultant impacts will be management. The soils assessment report highlights the fact that the mine lease area is dominated by moderately deep to deep gradational or uniform sand soils. These soils contain moderate to high proportions of fine sand and will therefore require acute management to prevent dust hazard and erosion. The management of these soil properties will affect all aspects associated with this mining venture from access tracks to rehabilitation. The proposed use of water sprays to prevent wind erosion is probably not a viable or effective option given the nature of these soils. The proposed use of these soils to cap spoil and other material at slopes of up to 20% will result in erosion problems if rehabilitation design is not carefully considered.	Provide more specific management practices that will achieve stabilization of disturbed landforms.	Vol 2, Sections 13.28 and 14.27 - Environmental Management Plans	Please refer to SEIS Appendix 4 - Appendix R1 and R2 for the Closure and Rehabilitation Strategies for the Mine and Offsite area, respectively for additional information.
54	DNRM	EMP - Mine	Soils and erosion	Topsoil will be spread at a depth of 50 – 100mm.	The minimum depth of topsoil to be respread during rehabilitation should reflect the minimum depth of topsoil stripping.	Vol 2, Sections 13.28 and 14.27 - Environmental Management Plans	Please refer to SEIS Appendix 4 - Appendix R1 and R2 for the Closure and Rehabilitation Strategies for the Mine and Offsite area, respectively for additional information.
54	DNRM	Water resources	General Comment – Watercourse determination	The definition of a watercourse is fundamental to the department's management of water resources under the Water Act 2000 across Queensland. Section 5 of the Water Act 2000 provides a definition of a watercourse for the purposes of the Water Act; including a definition of the longitudinal and lateral extent of the watercourse. Section 3 of the Water Regulation 2002 gives further clarification to identification of watercourses and establishing the location of the outer banks of watercourses. To determine whether or not features located on the project area are considered watercourse as defined under the Water Act 2000, a request for a watercourse determination can be made to the department. The request must be: • - lodged by: o - an owner* of the land, or o - an acknowledged representative of the owner (i.e. legal representative or consultant), or o - if not made by the owner or owner's representative, accompanied by the owner's consent;	It is recommended that the proponent ensures the determination of all features within the proposed project area have been carried out by an authorised officer under the Water Act 2000, to identify relevant regulatory provisions. It is also recommended that any required watercourse determinations are carried out prior to submitting a supplementary EIS, so relevant regulatory provisions are identified.	General Comment – Watercourse determination	Two watercourse determination requests were provided to the DNRM via email on 11 April 2013 in relation to a watercourse determination. Correspondence from DNRM dated 17 May 2013 confirmed the following features, have been previously determined watercourses as defined in the Water Act. • Carmichael River • Belyando River • Logan Creek The same correspondence also determined that the following features, exhibit the characteristics of a watercourse as defined in the Water Act. • Dyllingo Creek • Surprise Creek • Mistake Creek However the following features, do not exhibit the characteristics of a watercourse and are therefore considered to be drainage features that facilitate overland flow. • Laguna Creek • Pear Gully • Obungeena/Ogenbeena Creeks • unnamed feature located to the south of MLA70441 • unnamed feature located to the north of MLA70441
54	DNRM	Water resources	General Comment – Watercourse determination	• - made in writing (email, fax, letter); • - include the location and feature for which the determination is to be made; and • - state the reason for the watercourse determination. *Note that under the Water Act 2000, an owner includes an applicant for, or the holder of, a mineral development licence (MDL) or mining lease (ML) under the Mineral Resources Act 1989.	(as above)	General Comment – Watercourse determination	The following features were determined as watercourses as defined in the Water Act: - Carmichael River - Belyando River - Logan Creek - Dyllingo Creek - Surprise Creek - Mistake Creek There is currently no proposal to divert any of these watercourses. There is however a proposal to divert the upper reach of Eight Mile Creek and this waterway has been assessed by DNRM as not exhibiting the characteristics of a watercourse as defined in the Water Act. It is therefore considered to be a drainage feature that facilitates overland flow.
54	DNRM	Water resources	General Comment – Watercourse determination	The reporting on external and internal watercourse drains/diversions is documented in various sections within the EIS.	The information for all external and internal watercourse drains/diversions should be included as a separate section.	General Comment – Watercourse determination	Comments are noted

54	DNRM	Water resources	General Comment – Watercourse determination	The EIS describes the requirement for internal (located within the MLA and are constructed as required to provide required flood mitigation) and external (located outside of the mine affected area but within the MLA) diversion drains. The current information presented within the various EIS reports is not considered to be sufficient to allow an assessment under the Water Act 2000. The Terms of Reference required the proponent to describe and illustrate any proposed diversions of watercourses, including any staging and whether the diversions are proposed to be temporary or permanent. The EIS should contain sufficient conceptual information on the proposed watercourse diversions to demonstrate that any diversion can be constructed to meet engineering requirements and relevant regulatory guidelines with specific reference as to how the design and the monitoring of the diversion will meet Australian Coal Association Research Program (ACARP) standards and the departmental regional guideline entitled Central West Water Management and Use Regional Guideline: Watercourse Diversions – Central Queensland Mining Industry version 5 (2011).	The proponent should note the above and clarify the requirement of any approvals as a result of any proposed watercourse diversions, and provide sufficient conceptual information on each proposed watercourse diversion, including any staging and whether the diversions are proposed to be temporary or permanent (including any temporary diversions required during construction). It is also recommended that if a watercourse as defined under the Water Act 2000 is proposed to be diverted, that DNRM (Water Management) are engaged to discuss the level of conceptual information required.	General Comment – Watercourse determination	The following features were determined as watercourses as defined in the Water Act: - Carmichael River - Belyando River - Logan Creek - Dyllingo Creek - Surprise Creek - Mistake Creek There is currently no proposal to divert any of these watercourses. There is however a proposal to divert the upper reach of Eight Mile Creek and this waterway has been assessed by DNRM as not exhibiting the characteristics of a watercourse as defined in the Water Act. It is therefore considered to be a drainage feature that facilitates overland flow.
54	DNRM	Water resources	General Comment – Watercourse determination	This guideline is intended as a guide for use in the planning of watercourse diversions and when making applications for authorisations for diversions. It summarises the design criteria against which applications will be assessed, the information required to accompany applications for watercourse diversion authorisations, the legislative basis of the requirement for authorisations and the application process for a licence to interfere and development permit for the works. While the departmental regional guideline and the ACARP reports are specific to the diversion of watercourses in the Bowen Basin, the principles in the guideline and reports can still be adopted. The proponent needs to demonstrate that the proposed design of all watercourse diversions replicate the geomorphic and riparian vegetation conditions of the existing watercourses. Any potential impacts to existing watercourses upstream and downstream of any proposed watercourse diversions should be considered. Mining activities such as subsidence impacts from underground mining and mining infrastructure will need to be included in the assessment.	(as above)	General Comment – Watercourse determination	The following features were determined as watercourses as defined in the Water Act: - Carmichael River - Belyando River - Logan Creek - Dyllingo Creek - Surprise Creek - Mistake Creek There is currently no proposal to divert any of these watercourses. There is however a proposal to divert the upper reach of Eight Mile Creek and this waterway has been assessed by DNRM as not exhibiting the characteristics of a watercourse as defined in the Water Act. It is therefore considered to be a drainage feature that facilitates overland flow.
54	DNRM	Water resources	General Comment – Watercourse determination	If a watercourse, as defined under the Water Act 2000, is proposed to be diverted, a Water Licence under the Water Act 2000 will be required to interfere with the course of flow and the department regional guideline entitled Watercourse Diversions – Central Queensland Mining Industry version 5, 2011 will need to be used as a guide when making an application for a water licence to interfere with the course of flow by diversion. A drainage feature (i.e. a feature that is not considered to be a watercourse as defined under the Water Act 2000) is considered a feature that facilitates overland flow. A water licence is not required if a drainage feature is proposed to be diverted, assuming there is no capture of overland flow. If it is uncertain whether the feature to be diverted is a watercourse as defined under the Water Act 2000, a watercourse determination is required, and the proponent should contact DNRM for the details to instigate the watercourse determination process.	(as above)	General Comment – Watercourse determination	The following features were determined as watercourses as defined in the Water Act: - Carmichael River - Belyando River - Logan Creek - Dyllingo Creek - Surprise Creek - Mistake Creek There is currently no proposal to divert any of these watercourses. There is however a proposal to divert the upper reach of Eight Mile Creek and this waterway has been assessed by DNRM as not exhibiting the characteristics of a watercourse as defined in the Water Act. It is therefore considered to be a drainage feature that facilitates overland flow.
54	DNRM	General comment	Correct reference/ cross reference	References of supporting documentation are made within the EIS reports. The references have not been included within the EIS.	All references made within the EIS need to be included in their entirety within the EIS reports, preferably as appendices within each section.	General Comment - Inclusion of References	Noted and reports have been updated as required.
54	DNRM	Project description	Relevant Legislation and Project Approvals	The EIS states that Notwithstanding, the Project (Mine) offsite infrastructure is subject to the SP Act as this infrastructure is proposed to be located off the mining lease area (refer to Figure 1-1 for location of this infrastructure). Assessable development is likely to include a material change of use (MCU) (code or impact assessable), building works, reconfiguration of a lot and perational works (including bulk earthworks, clearing vegetation and road works). The proponent should note that a development permit under the Sustainable Planning Act 2009 will be required for water related operational works for the Project (Mine) offsite infrastructure.	The proponent to note that any water related operational works outside of the Mining Lease (for the rail project or offsite infrastructure) will require a development permit under the Sustainable Planning Act 2009.	Vol 1, Section 1.9.3.6	Noted. Please refer to SEIS Volume 4 Appendix C3, C4 and C5 for the applications required for rail, offsite and quarries component of the Project, respectively. This is also discussed in the Revised Approvals Report in Volume 4 Appendix C1.
54	DNRM	Project description	Relevant Legislation and Project Approvals	The EIS states that the Project will require development approvals and licences in accordance with the provisions of the Water Act 2000. The requirement for a development permit under the Sustainable Planning Act 2009 is no longer required if the proposed development is located on a mining lease and is considered to be an authorised activity under the Minerals Resources Act 1989. However, development permits are required under the Sustainable Planning Act 2009 for water related operational works that are not located on a mining lease. This advice applies to the entire EIS, including but not limited to, Volume 3 Section 13 EM Plan – Table 13-2 Summary of Potential Approvals (Page 13-17).	It is recommended that the proponent updates the text within this section accordingly.	Vol 1, Section 1.9.3.7 Vol 3, Section 13, table 13-2, page 13-17	Noted. Please refer to SEIS Volume 4 Appendix C3, C4 and C5 for the applications required for rail, offsite and quarries component of the Project, respectively. This is also discussed in the Revised Approvals Report in Volume 4 Appendix C1.
54	DNRM	Project description	Mine Planning	The EIS states that as the mine progresses south, additional construction works will be required to construct the bridge and infrastructure crossing of the Isaac River and mine support facilities south of the river. The project area is not in the vicinity of the Isaac River.	This crossing is likely to be across the Carmichael River, and the text should be corrected accordingly.	Vol 2, Section 2.10.1	Noted.

54	DNRM	Project description	Relevant Legislation and Project Approvals	The EIS states that construction of off-site water supply components will be required. This will include: upgrades of eight existing dams on North Creek and Obungeena Creek. The project area is located in the Burdekin Basin. If these features are considered watercourses as defined under the Water Act 2000, the Water Resource (Burdekin Basin) Plan 2007 sets out which applications to interfere with or increase the interference with water in a watercourse by impounding the flow of water can be accepted and decided. Section 26 (2) outlines these purposes. If these features are not considered watercourses as defined under the Water Act 2000, they would be considered drainage features that facilitate overland flow. The capture of overland flow in the Belyando catchment can only be undertaken in accordance with the provisions of the Water Resource (Burdekin Basin) Plan 2007. In accordance with the Code for self-assessable development for taking overland flow water using limited capacity works, the storages must be independent of other storages i.e. storage works must not be connected. If a watercourse determination is required to determine whether North Creek and Obungeena Creek are watercourses as defined under the Water Act 2000, the proponent should contact DNRM with the required details to instigate the watercourse determination process.	It is recommended that the proponent ensures that any proposal regarding the upgrade of existing infrastructure associated with these features is in accordance with the relevant legislative provisions. The text in this section and any other section, in which this proposal is described, should be updated accordingly.	Vol 2, Section 2.10.3.1	Please note that the in stream harvesting of water from Obungeena and North Creeks has been removed from the project description. Watercourse Determination has been undertaken by DNRM in May 2013 and North Creek was one of watercourses which could not be determined without a site inspection. DNRM will conduct the inspection in August to conclude the determination. This is also discussed in the Revised Approvals Report in Volume 4 Appendix C1.
54	DNRM	Project description	Relevant Legislation and Project Approvals	The EIS states that construction of an off-stream storage near the Belyando River. This will be 5 GL capacity “turkey nest” style dam, and requirements for lining will be determined during detailed design.	The proponent should note the capture of overland flow in the Belyando catchment can only be undertaken in accordance with the provisions of the Water Resource (Burdekin Basin) Plan 2007. This proposed “turkey nest” style dam would have to be designed so that it does not capture overland flow, otherwise a water licence will be required.	Vol 2, Section 2.10.3.1	Please refer to SEIS Volume 4 Appendix C4 for the application for License to Take Water from the Belyando River. This is also discussed in the Revised Approvals Report in Volume 4 Appendix C.
54	DNRM	Project description	Relevant Legislation and Project Approvals	The EIS lists some codes and guidelines including: - Guideline - Activities in a watercourse, lake or spring associated with a resource activity or mining operation, and - Guideline - Activities in a watercourse, lake or spring carried out by a landowner for activities such as access road crossings, water supply infrastructure and underground infrastructure that may or may not be applicable. The proponent should note that if an activity is not able to be carried out under either guideline, a Riverine Protection Permit will be required under the Water Act 2000.	It is recommended that the proponent reads the guidelines thoroughly. It is also recommended that the proponent note that a Riverine Protection Permit will be required to be applied for under Section 266 of the Water Act 2000, unless these activities can be carried out under either of the abovementioned guidelines. The proponent should also note that if any proposed works within a watercourse (as defined under the Water Act 2000) is associated with the take of or interference with water, other approvals may be required including a water licence under the Water Act 2000 and/or a development approval (for proposed works located off the mining lease) under the Sustainable Planning Act 2009.	Vol 2, Section 2.10.6.5	Please refer to SEIS Volume 4 Appendix C2 for the applications for License to Interfere with the Course of Flow from the Eight Mile Creek and Cabbage Tree Creek. This is also discussed in the Revised Approvals Report in Volume 4 Appendix C.
54	DNRM	Project description	Regulated structures	The EIS states sediment basins will treat stormwater runoff from disturbed areas. Where there is an environmental benefit in leaving a sediment dam in place, or where it may provide useful water supply for future grazing activities, the basin may be left in place.	The capture of overland flow post mine operation will need to comply with the provisions of the Water Act 2000 and the Water Resource (Burdekin Basin) Plan 2007. Where these storages do not meet the requirements of the Water Act 2000 or the relevant water resource plan, they will need to be decommissioned.	Vol 2, Section 2.12.1.3	Noted. Please refer to the Mine Closure and Rehabilitation Strategy for proposed details regarding mine closure and rehabilitation, including to water management infrastructure (Volume 4 Appendix R1).
54	DNRM	Project description	Regulated structures	Table 2-20 of the EIS lists the proposed sediment basin parameters, including the size of the proposed sediment basins.	It is recommended that the proponent provides a map showing the location of these proposed sediment basins. The proponent is to note that the capture of overland flow must be in accordance with the provisions of the Water Act 2000 and the Water Resource (Burdekin Basin) Plan 2007. The proponent should also note that the provision under section 79(d)(i) of the Water Resource (Burdekin Basin) Plan 2007, only applies to the capture of overland flow of not more than the amount necessary to satisfy the requirements of an environmental authority issued under the Environmental Protection Act 1994; and ultimately this particular provision only applies to the capture of overland flow on a mining lease. If these sediment basins are to be located off the mining lease, then the other provisions under section 79 of the Water Resource (Burdekin Basin) Plan 2007 apply	Vol 2, Section 2.12.1.3	An updated table has been provided in the Project Description for the Project. This table provides further information regarding sediment basin parameters.
54	DNRM	Project description	Regulated structures	The EIS states that there are eight existing farm dams on watercourses in the vicinity of the off-site infrastructure area, four on North Creek and four on Obungeena Creek. These will be enlarged to a capacity of about 250 ML each and used to capture flow from these watercourses. The project area is located in the Burdekin Basin. If these features are considered watercourses as defined under the Water Act 2000, the Water Resource (Burdekin Basin) Plan 2007 sets out which applications to interfere with or increase the interference with water in a watercourse by impounding the flow of water can be accepted and decided. Section 26 (2) outlines these purposes. If these features are not considered watercourses as defined under the Water Act 2000, they would be considered drainage features that facilitate overland flow. The capture of overland flow in the Belyando catchment can only be undertaken in accordance with the provisions of the Water Resource (Burdekin Basin) Plan 2007. If a watercourse determination is required to determine whether North Creek and Obungeena Creek are watercourses as defined under the Water Act 2000, the proponent should contact DNRM with the required details to instigate the watercourse determination process.	It is recommended that the proponent ensures that any proposal regarding the capture and take of water from these features is in accordance with the relevant legislative provisions. The text in this section should be updated accordingly.	Vol 2, Section 2.12.3.4	Please note that the in stream harvesting of water from Obungeena and North Creeks has been removed from the project description. Watercourse Determination has been undertaken by DNRM in May 2013 and North Creek was one of watercourses which could not be determined without a site inspection. DNRM will conduct the inspection in August to conclude the determination. This is also discussed in the Revised Approvals Report in Volume 4 Appendix C1.

54	DNRM	Project description	Regulated structures	The EIS states that as ponding is expected to occur in subsidence troughs, an assessment will also be undertaken to determine whether ponds need to be drained or can be retained as habitat features. The description of subsidence impacts on water resources and proposed mitigation measures is inadequate. The Terms of Reference for the EIS (page 30) includes: Provide a detailed description of subsidence effects on surface and groundwater hydrology. Propose mitigation measures to deal with any significant impacts that would result from subsidence. Address impacts of subsidence on water resources in section 3.4.2 Potential impacts and mitigation measures. The Terms of Reference for the EIS (page 30) includes: Describe and address the impacts of subsidence, including but not limited to: • surface water resources • local drainage patterns • floodplains and overland flows • areas susceptible to higher levels of erosion, such as watercourses confluences • ponding areas within the floodplain • volumes of local and large-scale catchment runoff, including the interception of low flow events • downstream users • infrastructure within and above the watercourse.	The EIS should include the information requested in the Final Terms of Reference for the EIS, specifically, the subsidence impacts on water resources and mitigation measures.	Vol 2, Section 2.15.2.2	Comments regarding the request for further information on subsidence impacts on water resources and mitigation measures is noted. A revised Subsidence Assessment Report (refer to SEIS Volume 4 Appendix I1) has been prepared for the Project (Mine). Adani has also developed a Draft Subsidence Management Plan, SEIS Volume 4, Appendix I2, which assesses impacts on SSBV and MNES and proposes mitigation and management measures to minimise potential impacts. Mitigation measures for subsidence management were initially proposed in the EIS EMP, Volume 2 Section 13.
54	DNRM	Project description	Regulated structures	The EIS states: Water management infrastructure may be left in place where this will be of benefit to the future land use. In particular, sediment ponds may provide useful water resources for cattle grazing and native fauna. Where sediment dams are to be left in place: • A dam safety inspection will be undertaken and if safety concerns are identified the dam will be decommissioned • Sediments at the base of the dam will be tested for contamination and removed if contaminant levels exceed guidelines in place at the time • Where there are ongoing maintenance requirements, a maintenance plan will be prepared and handed over to the landholder with an explanation of the requirements and obligations.	The capture of overland flow post mine operation will need to comply with the provisions of the Water Act 2000 and the Water Resource (Burdekin Basin Plan 2007).	Vol 2, Section 2.15.2.5	Adani comply with the provisions of the Water Act 2000 and the Water Resource (Burdekin Basin Plan 2007) if it will be considering the capture of overland flow post mine operation. The need for keeping sediment dams will be better defined once a Detailed Rehabilitation Plan is developed.
54	DNRM	Project description	Mine Planning	There is conflicting information as to exclusion of mining activities within the Carmichael River floodplain. In Volume 2 Section 2 – Project description, the reported corridor width is 500m either side of the Carmichael River. Volume 2 Section 4.2.4.4 indicates that underground mining will be located 215m from the Carmichael River.	The proposed corridor width where exclusion of mining activities is proposed within the Carmichael River floodplain needs to be defined. Confirmation is sought that mining activities also include any proposed flood levees. It is further requested that the proponent confirm that the hydraulic modelling undertaken for changes to the Carmichael River floodplain has been populated with the correct corridor width.	Vol 2, Section 4.2.4.4	The updated Project Description (refer to SEIS Volume 1 Section 2) verifies that the corridor width is 500 m. The updated mine plan for the Project has allowed for a 500m wide corridor for either side of the Carmichael River floodplain.
54	DNRM	Land	Subsidence management	The EIS states that … subsidence will also result in alteration in surface drainage patterns due to altered topography. As these streams are quite small and ephemeral, when flowing, the streams will empty into the subsidence troughs and result in ponding in some of the troughs. Proactive management of subsidence is not warranted in this instance as there are no major watercourses and no infrastructure or other surface features to be protected.	The EIS should sufficiently describe the impacts of subsidence on water resources and suitable mitigation measures should be proposed.	Vol 2, Section 4.2.4.4	The impacts of subsidence on water resources have been included within the updated sections of the SEIS Revised Subsidence Assessment Report (refer to SEIS Volume 4 Appendix I1) and the Updated Mine Hydrogeology Report (refer to SEIS Volume 4 Appendix K1). The subsidence report concluded that: — The predicted subsidence and tilts are likely to be of sufficient magnitude to result in changes in the surface water flows along the drainage lines. — Increased ponding is predicted to develop in the drainage lines directly above the proposed longwalls. — It is expected, at the magnitudes of predicted curvatures and strains, that significant fracturing and buckling would occur in the uppermost bedrock beneath the natural surface soils along the drainage lines. Surface cracking in the beds of the drainage lines would be visible at the surface where the depths of the surface soils are relatively shallow. The subsidence report provided the following management measures: — During and at the completion of mining, earthworks will be required to manage the natural gradient along the drainage lines. Relevant mitigation and management measures have been outlined in these reports and incorporated where relevant into the Project (Mine) draft EMP and the Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendices Q1 and R1, respectively). Adani has also developed a Draft Subsidence Management Plan, SEIS Volume 4, Appendix I2, which assesses impacts on SSBV and MNES and proposes mitigation and management measures to minimise potential impacts.

54	DNRM	Land	Subsidence management	The EIS states …that while it is not expected that ponding will form to the extent that overflows occur, or that streams will enter subsurface strata, this will also be monitored, as will the water quality of ponded areas. If ponding is presenting an environmental or safety risk, ponds will either be drained by breaching the unsubsided development roads downstream of the ponded area, or by diverting upstream flows around the subsided area.	As the ponding areas will be capturing flows, there is a requirement to monitor and manage this for water resource regulation purposes.	Vol 2, Section 4.2.4.4	The impacts of subsidence on water resources have been included within the updated sections of the SEIS Revised Subsidence Assessment Report (refer to SEIS Volume 4 Appendix I1) and the Updated Mine Hydrogeology Report (refer to SEIS Volume 4 Appendix K1). The subsidence report concluded that: — The predicted subsidence and tilts are likely to be of sufficient magnitude to result in changes in the surface water flows along the drainage lines. — Increased ponding is predicted to develop in the drainage lines directly above the proposed longwalls. — It is expected, at the magnitudes of predicted curvatures and strains, that significant fracturing and buckling would occur in the uppermost bedrock beneath the natural surface soils along the drainage lines. Surface cracking in the beds of the drainage lines would be visible at the surface where the depths of the surface soils are relatively shallow. The subsidence report provided the following management measures: — During and at the completion of mining, earthworks will be required to manage the natural gradient along the drainage lines. Relevant mitigation and management measures have been outlined in these reports and incorporated where relevant into the Project (Mine) draft EMP and the Closure and Rehabilitation Management Strategy for the Mine (refer to SEIS Volume 4 Appendices Q1 and R1, respectively).
54	DNRM	Water resources	Surface Water	The EIS proposes a bridge crossing across the Carmichael River for a haul road and conveyor. For activities carried out within a watercourse, lake or spring (i.e. destroying native vegetation, excavating or placing fill), by an environmental authority holder (for a resource activity) or a MDL or ML holder (for mining operations) that are necessary for and associated with a resource activity or mining operations, the holder may carry out the activity in accordance with the departmental Guideline - Activities in a watercourse, lake or spring associated with a resource activity or mining operations (version 3). Where these activities cannot be carried out in accordance with the departmental guideline mentioned above, a Riverine Protection Permit will be required under section 266 of the Water Act 2000.	It is recommended that the proponent reads this departmental guideline thoroughly and determines whether this proposal can be undertaken in accordance with the departmental Guideline - Activities in a watercourse, lake or spring associated with a resource activity or mining operations (version 3). The proponent should also note that if any proposed works within a watercourse is associated with the take of or interference with water, other approvals may be required including a water licence under the Water Act 2000 and/or a development approval (for proposed works located off the mining lease) under the Sustainable Planning Act 2009.	Vol 2, Section 6.4.2.1	The proposed bridge crossing of the Carmichael River will be carried out in accordance with the Guideline - Activities in a watercourse, lake or spring associated with a resource activity or mining operations (Version 3). Expected impacts from the bridge are discussed in the Revised Mine Hydrology Report, SEIS Volume 4 Appendix K5.
54	DNRM	Water resources	Waterway diversions	The EIS states that the external diversion drains have been designed to minimise the length of the diversion to reduce earthworks.	Where it is a watercourse as defined under the Water Act 2000 that is proposed to be diverted, this statement is unacceptable, as it is not in accordance with the principles detailed in the department's regional guideline entitled Central West Water Management and Use Regional Guideline: Watercourse Diversions – Central Queensland Mining Industry version 5 (2011). While the departmental regional guideline is specific to the diversion of watercourses in the Bowen Basin, the principles in the guideline can still be adopted.	Vol 2, Section 6.4.2.2	The following features were determined as watercourses as defined in the Water Act: - Carmichael River - Belyando River - Logan Creek - Dyllingo Creek - Surprise Creek - Mistake Creek There is currently no proposal to divert any of these watercourses. There is however a proposal to divert the upper reach of Eight Mile Creek and this waterway has been assessed by DNRM as not exhibiting the characteristics of a watercourse as defined in the Water Act. It is therefore considered to be a drainage feature that facilitates overland flow.
54	DNRM	Water resources	Relevant Legislation and Project Approvals	The EIS states that sources of sand must, as far as is practicably possible, be obtained from borrow pits in areas where shallow aquifers are not present (e.g. older alluvial palaeochannels) and should not be obtained from present-day creek beds. The EIS does not outline whether there will be a requirement for a Quarry Material Allocation Notice and an associated Development Approval under the Sustainable Planning Act 2009 (as requested on page 53 of the Terms of Reference for the EIS).	The proponent should note that an application for Quarry Material Allocation Notice under section 280 of the Water Act 2000 will be required for the extraction of quarry material from watercourses (as defined under the Water Act 2000).	Vol 2, Section 6.4.4.1	Noted
54	DNRM	Water resources	Water supply	This section of the EIS describes impacts of the construction of flood harvesting stations at Belyando River and North Creek. The North Creek flood harvesting station does not seem to be included in the Description of the Project (such as in 2.10.6 Construction Methods and 6.1 Project Overview) or in Volume 4 Appendix M Mine Land Use Report under Section 3.7.3 Water Supply Infrastructure Proposed for the Project (Mine).	The proponent should clarify whether a flood harvesting station will be situated in North Creek and details should be provided for this if this is proposed. Otherwise, the EIS should be updated so the water supply infrastructure is consistent across all sections of the EIS.	Vol 2, Section 6.5	The details for the flood harvesting from the Belyando River are located in the SEIS Appendix B Project Description, Section 7.6.7 and 9.5.2. In stream flood harvesting from North Creek and Obungeena Creek was considered as part of the EIS however these activities have been removed from the Project Description, refer to SEIS Volume 1 Project Wide Section 3.2.
54	DNRM	Water resources	Water supply	The EIS states that testing of Belyando River and North Creek flood harvesting stations and North Creek and Obungeena Creek instream storage pump stations will involve sourcing and discharge of a large volume of water. The precise quantity and source of water is unconfirmed.	It is recommended that the proponent clarifies what is intended as part of this proposal. The proponent will need to provide more information such as the quantity required, the proposed source of water, where the water will be discharged and what authorisations will be required to allow this.	Vol 2, Section 6.5.1.1	The details for the flood harvesting from the Belyando River are located in the SEIS Appendix B Project Description, Section 7.6.7 and 9.5.2. In stream flood harvesting from North Creek and Obungeena Creek was considered as part of the EIS however these activities have been removed from the Project Description, refer to SEIS Volume 1 Project Wide Section 3.2.

54	DNRM	Water resources	General Comment – Watercourse determination	The EIS describes the requirement for internal (located within the MLA and are constructed as required to provide required flood mitigation) and external (located outside of the mine affected area but within the MLA) diversion drains. The current information presented within the various EIS reports is not considered to be sufficient to allow an assessment under the Water Act 2000. The Terms of Reference required the proponent to describe and illustrate any proposed diversions of watercourses, including any staging and whether the diversions are proposed to be temporary or permanent. The EIS should contain sufficient conceptual information on the proposed watercourse diversions to demonstrate that any diversion can be constructed to meet engineering requirements and relevant regulatory guidelines with specific reference as to how the design and the monitoring of the diversion will meet Australian Coal Association Research Program (ACARP) standards and the departmental regional guideline entitled Central West Water Management and Use Regional Guideline: Watercourse Diversions – Central Queensland Mining Industry version 5 (2011).	The proponent should note the above and clarify the requirement of any approvals as a result of any proposed watercourse diversions, and provide sufficient conceptual information on each proposed watercourse diversion, including any staging and whether the diversions are proposed to be temporary or permanent (including any temporary diversions required during construction). It is also recommended that if a watercourse as defined under the Water Act 2000 is proposed to be diverted, that DNRM (Water Management) are engaged to discuss the level of conceptual information required.	General Comment – Watercourse determination	The following features were determined as watercourses as defined in the Water Act: - Carmichael River - Belyando River - Logan Creek - Dyllingo Creek - Surprise Creek - Mistake Creek There is currently no proposal to divert any of these watercourses. There is however a proposal to divert the upper reach of Eight Mile Creek and this waterway has been assessed by DNRM as not exhibiting the characteristics of a watercourse as defined in the Water Act. It is therefore considered to be a drainage feature that facilitates overland flow.
54	DNRM	Water resources	General Comment – Watercourse determination	This guideline is intended as a guide for use in the planning of watercourse diversions and when making applications for authorisations for diversions. It summarises the design criteria against which applications will be assessed, the information required to accompany applications for watercourse diversion authorisations, the legislative basis of the requirement for authorisations and the application process for a licence to interfere and development permit for the works. While the departmental regional guideline and the ACARP reports are specific to the diversion of watercourses in the Bowen Basin, the principles in the guideline and reports can still be adopted. The proponent needs to demonstrate that the proposed design of all watercourse diversions replicate the geomorphic and riparian vegetation conditions of the existing watercourses. Any potential impacts to existing watercourses upstream and downstream of any proposed watercourse diversions should be considered. Mining activities such as subsidence impacts from underground mining and mining infrastructure will need to be included in the assessment.	(as above)	General Comment – Watercourse determination	The following features were determined as watercourses as defined in the Water Act: - Carmichael River - Belyando River - Logan Creek - Dyllingo Creek - Surprise Creek - Mistake Creek There is currently no proposal to divert any of these watercourses. There is however a proposal to divert the upper reach of Eight Mile Creek and this waterway has been assessed by DNRM as not exhibiting the characteristics of a watercourse as defined in the Water Act. It is therefore considered to be a drainage feature that facilitates overland flow.
54	DNRM	Water resources	General Comment – Watercourse determination	If a watercourse, as defined under the Water Act 2000, is proposed to be diverted, a Water Licence under the Water Act 2000 will be required to interfere with the course of flow and the department regional guideline entitled Watercourse Diversions – Central Queensland Mining Industry version 5, 2011 will need to be used as a guide when making an application for a water licence to interfere with the course of flow by diversion. A drainage feature (i.e. a feature that is not considered to be a watercourse as defined under the Water Act 2000) is considered a feature that facilitates overland flow. A water licence is not required if a drainage feature is proposed to be diverted, assuming there is no capture of overland flow. If it is uncertain whether the feature to be diverted is a watercourse as defined under the Water Act 2000, a watercourse determination is required, and the proponent should contact DNRM for the details to instigate the watercourse determination process.	(as above)	General Comment – Watercourse determination	The following features were determined as watercourses as defined in the Water Act: - Carmichael River - Belyando River - Logan Creek - Dyllingo Creek - Surprise Creek - Mistake Creek There is currently no proposal to divert any of these watercourses. There is however a proposal to divert the upper reach of Eight Mile Creek and this waterway has been assessed by DNRM as not exhibiting the characteristics of a watercourse as defined in the Water Act. It is therefore considered to be a drainage feature that facilitates overland flow.
54	DNRM	EMP - Mine	Relevant Legislation and Project Approvals	The table queries whether licences to interfere with flow by impounding water and licences to interfere with the course of flow are required for areas affected by subsidence.	Subsidence is authorised by the environmental authority, however the impacts on water resources should be detailed in the EIS and monitoring and remediation activities should be included in a detailed Subsidence Management Plan. A water licence is only required if subsidence will result in the interference with the flow of water in a watercourse (as defined under the Water Act 2000) by changing the course of flow to the extent that a licence would be required.	Vol 2, Section 13.5.3, Page 13-24	Noted. Subsidence assessment was updated to reflect the revised mine plan. Please refer to SEIS Volume 4 Appendix I1 for the Subsidence Assessment Report. Adani has also developed a Draft Subsidence Management Plan, SEIS Volume 4, Appendix I2, which assesses impacts on SSBV and MNES and proposes mitigation and management measures to minimise potential impacts.
54	DNRM	EMP - Mine	Relevant Legislation and Project Approvals	Approvals listed for the Water Act are Riverine Protection Permit, Licence to Interfere with flow by impounding water, Licence to interfere with the course of flow (diversion) and Licence to take groundwater. There may be more authorisations that may apply for the mine project. In addition to the approvals listed for the Water Act in Table 13-7 Approvals Register, other approvals may include: • Water Licence and/or Water Allocation for the take of water from a watercourse, lake, spring or aquifer; • Water Permit for the temporary take of surface water from a watercourse, lake, spring or aquifer (for an activity which has a reasonably foreseeable conclusion date); and • Quarry Material Allocation Notices	It is recommended that the proponent note the other approvals that may apply and update the text where required.	Vol 2, Section 13.5.3	This has been addressed in revised Approvals Report in SEIS Volume 4, Appendix C1 (Project Approvals)
54	DNRM	EMP - Offsite	Relevant Legislation and Project Approvals	Approvals listed for the Water Act are Riverine Protection Permit and Licence to Interfere with flow by impounding water. There may be more authorisations that may apply for the mine project. In addition to the approvals listed for the Water Act in Table 14-6 Approvals Register, other approvals may include: • Water Licence and/or Water Allocation for the take of water from a watercourse, lake, spring or aquifer; • Water Permit for the temporary take of surface water from a watercourse, lake, spring or aquifer (for an activity which has a reasonably foreseeable conclusion date); • Quarry Material Allocation Notices; and • Water Licence to interfere with flow by impoundment or diversion.	It is recommended that the proponent note the other approvals that may apply and update the text where required.	Vol 2, Section 14.5.3	This has been addressed in revised Approvals Report in SEIS Volume 4, Appendix C1 (Project Approvals)

54	DNRM	Project description	Relevant Legislation and Project Approvals	The concept overview refers to the requirement of waterway crossings as part of the construction and operation of the Rail Project. For activities carried out within a watercourse, lake or spring (i.e. destroying native vegetation, excavating or placing fill), by an environmental authority holder (for a resource activity) or a MDL or ML holder (for mining operations) that are necessary for and associated with a resource activity or mining operations, the holder may carry out the activity in accordance with the departmental Guideline - Activities in a watercourse, lake or spring associated with a resource activity or mining operations (version 3). Where these activities cannot be carried out in accordance with the departmental guideline mentioned above, a Riverine Protection Permit will be required under section 266 of the Water Act 2000.	It is recommended that the proponent reads this departmental guideline thoroughly and determines whether this proposal can be undertaken in accordance with the departmental Guideline - Activities in a watercourse, lake or spring associated with a resource activity or mining operations (version 3). The proponent should also note that if any proposed works within a watercourse is associated with the take of or interference with water, other approvals may be required including a water licence under the Water Act 2000 and/or a development approval (for proposed works located off the mining lease) under the Sustainable Planning Act 2009. This includes the proposal of linking multiple separate drainage pathways that are located in close proximity to each other, by longitudinal drainage structures.	Vol 3, Section 2.3.1	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	Table 2-6 lists the Investigative Quarry and Borrow Area Locations and Attributes.	It is recommended that the proponent note that any extraction of quarry material from a watercourse or lake (as defined under the Water Act 2000) will require a Quarry Material Allocation Notice issued under the Water Act 2000.	Vol 3, Section 2.6.3	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	This EIS states that the diversion of watercourses for the purpose of construction would be confirmed during detailed design and avoided where practicable. If a watercourse, as defined under the Water Act 2000, is proposed to be diverted, whether it's temporary or permanent, a Water Licence under the Water Act 2000 will be required to interfere with the course of flow and the department regional guideline entitled Watercourse Diversions – Central Queensland Mining Industry version 5, 2011 will need to be used as a guide when making an application for a water licence to interfere with the course of flow by diversion.	It is recommended that the proponent engages DNRM (Water Management) as soon as possible to discuss this proposal and any relevant legislative requirements.	Vol 3, Section 2.6.3	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	This section states that it will be necessary to capture overland flow and transfer it to the cross drainage structures.	It is recommended that the proponent ensures this proposal is in accordance with the provisions of the relevant water resource plan, i.e. any capture of overland flow prior to diverting must meet the limited capacity provisions of the relevant water resource plan.	Vol 3, Section 2.6.3	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Water resources	Relevant Legislation and Project Approvals	The EIS states "…that there is currently no regulation of the Belyando/Suttor surface water management area under the Water Resources (Burdekin Basin) Plan 2007. The Water Resource Plan focuses on water extraction for the irrigated farmlands in the lower Burdekin and Houghton River sub-catchments." This comment is incorrect. The Belyando/Suttor subcatchment is not listed as a water management area within the plan but the plan applies to the entire Burdekin Basin including the Belyando/Suttor subcatchment. There is no supplemented water supply in the Belyando/Suttor subcatchment.	It is recommended that the proponent updates the text within this section accordingly.	Vol 3, Section 6.1.2.1	Noted. Addressed in the SEIS Volume 4 Appendix K5 Hydrology Assessment and Volume 4 Appendix C1 Project Approvals.
54	DNRM	Water resources	Relevant Legislation and Project Approvals	This section of the EIS states that if river and/or creek flows are temporarily impounded by the construction phase embankments, this can potentially reduce the supply of downstream stock water and / or irrigation supply. During the construction of rail embankments, any flows within watercourses (as defined under the Water Act 2000) must be allowed to pass downstream, i.e. water impounded could be pumped downstream during construction of embankments. If impoundment of overland flow is proposed, this must be completed in accordance with the relevant water resource plan.	It is recommended that the proponent note the above and update the text accordingly.	Vol 3, Section 6.1.3.2	Noted. Addressed in the SEIS Volume 4 Appendix K5 Hydrology Assessment and Volume 4 Appendix C1 Project Approvals.
54	DNRM	Water resources	Waterway diversions	There is no assessment of stream geomorphology and riparian vegetation associated with watercourses (as defined under the Water Act 2000) impacted by proposed mining activities.	In accordance with the Terms of Reference, it is recommended that the proponent complete a detailed stream geomorphology and riparian vegetation assessment of all watercourses (as defined under the Water Act 2000) within the mining lease that will be impacted by mining activities. Activities include proposed diversions and subsidence impacts from underground mining with mine infrastructure such as haul roads, road crossings, pipelines included. Current stream geomorphic and riparian conditions, channel evolution and stream dynamics, channel shape and bank stability should be included within the assessment. This information should be documented as a separate section.	Vol 4, Appendix P1, Mine Hydrology Report – General Comment	A geomorphology assessment has been included as part of SEIS Volume 4 Appendix K5.
54	DNRM	Water resources	Relevant Legislation and Project Approvals	The EIS states that under SPA, construction works to take water (i.e. extraction of groundwater or dewatering) require a Development Permit and will be applicable if water is to be taken for any purpose for the Project other than water monitoring. A development permit under the Sustainable Planning Act 2009 is no longer required if the proposed development is located on a mining lease and is considered to be an authorised activity under the Minerals Resources Act 1989. Development Permits are required under the Sustainable Planning Act 2009 for water related operational works for works not on a Mining Lease.	It is recommended that the proponent updates the text within this section accordingly.	Vol 4, Appendix P1, Section 3.3	Noted. Addressed in the SEIS Volume 4 Appendix K5 Hydrology Assessment and Volume 4 Appendix C1 Project Approvals.

54	DNRM	Water resources	Relevant Legislation and Project Approvals	The EIS states that the Project (Mine) will require approvals and licences in accordance with the provisions of the Water Act 2000, for activities including interfering with watercourses traversing the Project Area where not included under the guideline 'Activities in a watercourse, lake or spring associated with a resource activity or mining operation' (DNRM 2012).	It is recommended that the proponent note that for activities carried out within a watercourse, lake or spring (i.e. destroying native vegetation, excavating or placing fill), by an environmental authority holder (for a resource activity) or a MDL or ML holder (for mining operations) that are necessary for and associated with a resource activity or mining operations, the holder may carry out the activity in accordance with the departmental Guideline - Activities in a watercourse, lake or spring associated with a resource activity or mining operations (version 3). Where these activities cannot be carried out in accordance with the departmental guideline mentioned above, a Riverine Protection Permit will be required under section 266 of the Water Act 2000. The proponent should also note that if any proposed works within a watercourse (as defined under the Water Act 2000) is associated with the take of or interference with water (including interference by impoundment or diversion), other approvals may be required including a water licence under the Water Act 2000 and/or a development approval (for proposed works located off the mining lease) under the Sustainable Planning Act 2009. It is recommended that this text is updated accordingly.	Vol 4, Appendix P1, Section 3.4	Noted. Addressed in the SEIS Volume 4 Appendix K5 Hydrology Assessment and Volume 4 Appendix C1 Project Approvals.
54	DNRM	Water resources	Relevant Legislation and Project Approvals	The Proponent's authorisation to take water from Dyllingo Ck (authorisation reference 604941) for construction purposes mentioned in the text on p 4-21 and in Table 4-3 on p 4-22 was a water permit not a licence to take water. Note, a water permit is for the take of water for an activity that has a reasonable foreseeable conclusion date.	It is recommended that the information in this section is corrected. The proponent should also note that this water permit (authorisation reference 604941) expired on 31 Dec 2011.	Vol 4, Appendix P1, Section 4.5.2	Water for construction will be taken from groundwater bores. Requested information is provided in SEIS Appendix K2 Water Balance Report.
54	DNRM	Water resources	Flooding	The map of the flooding of the Carmichael River post development seems to show water in the same area where the underground mining will be causing subsidence of panels with a depth of from 5- 8m. The EIS does not appear to have any maps where the subsided panels are shown with extent of flooding, watercourses (as defined under the Water Act 2000), drainage features and the drains proposed for the area.	It is recommended that information regarding flooding and subsidence impacts, and mitigation (drainage) need to be shown together	Vol 4, Appendix P2 Preliminary Water Balance, Appendix E PreliminaryFlood Mitigation and Creek Diversion Design - 9 Postdevelopment flooding conditions (Page 34)	Maps showing flooding in the subsidence areas has been provided in SEIS Appendix K4 Flood Study. Adani has developed a Draft Subsidence Management Plan, SEIS Volume 4, Appendix I2, which assesses impacts on SSBV and MNES and proposes mitigation and management measures to minimise potential impacts.
54	DNRM	Project description	Relevant Legislation and Project Approvals	The EIS discusses the need for quarry material and states that under section 236 of the MR Act, a holder of a mining lease is entitled to use sand, rock and gravel for purpose of constructing infrastructure on the ML. The Terms of Reference requests the proponent to outline whether there will be a requirement for a Quarry Material Allocation Notice under the Water Act 2000 and an associated Development Approval under the Sustainable Planning Act 2009. It is unclear whether any quarry material will be sourced from watercourses (as defined under the Water Act 2000) for the projects.	The proponent to note that there will be a requirement for a Quarry Material Allocation Notice under the Water Act 2000 and an associated Development Approval under the Sustainable Planning Act 2009 if material is required from a watercourse as defined under the Water Act 2000.	Vol 4, Appendix D, Section 2.9	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	The EIS states that water licences will be required for storages within the ML that will contain mine affected water, treated water and raw water. Mine affected water storages are regulated structures authorised and managed under the environmental authority. A mine affected water storage that is located on a watercourse as defined under the Water Act 2000 is not something that is inconsistent with the purposes of the Water Resource (Burdekin Basin) Plan 2007. The capture of mine affected overland flow can be completed in accordance with the provision under section 79(d)(i) of the Water Resource (Burdekin Basin) Plan 2007, which applies to the capture of overland flow of not more than the amount necessary to satisfy the requirements of an environmental authority issued under the Environmental Protection Act 1994; and ultimately this particular provision only applies to the capture of overland flow on a mining lease.	It is recommended that the proponent updates the text within this section accordingly.	Vol 4, Appendix D, Section 3.4	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	The EIS states that water licences for taking and or diverting overland flow harvesting including discharge of water at peak flows from the mine to the Carmichael and Belyando Rivers. The discharge of water at peak flows from the mine to the Carmichael and Belyando Rivers would be authorised under the environmental authority.	It is recommended that the proponent updates the text within this section accordingly.	Vol 4, Appendix D, Section 3.4	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	The EIS states that Riverine Protection Permits are not required under environmental authority. In accordance with sections 49(e), 50(d) and 51(d) of the Water regulation 2002, destroying vegetation, excavating or placing fill in a watercourse, lake or spring is permitted if the destruction is carried out under an environmental authority (mining activities) under the Environmental Protection Act 1994. However, for these provisions to apply, these particular activities would need to be appropriately conditioned within the environmental authority. If these activities are not conditioned in the environmental authority, an environmental authority holder (for a resource activity) or a MDL or ML holder (for mining operations) carrying out these activities that are necessary for and associated with a resource activity or mining operations, the holder may carry out the activity in accordance with the departmental Guideline - Activities in a watercourse, lake or spring associated with a resource activity or mining operations (version 3). Where these activities cannot be carried out in accordance with the departmental guideline mentioned above, a Riverine Protection Permit will be required under section 266 of the Water Act 2000.	It is recommended that the proponent note that where proposed activities (destroying vegetation, excavating or placing fill in a watercourse, lake or spring) are not conditioned in the environmental authority, legislative requirements under the Water Act 2000 or the Water Regulation 2002 are triggered	Vol 4, Appendix D, Section 3.4	Addressed in Volume 4, Appendix C1 (Project Approvals)

54	DNRM	Project description	Relevant Legislation and Project Approvals	Figure 4 indicates authorisations and status for proposed activities. Water permits for drilling of bores and to harvest water during peak flows are said to be held by the proponent for rail investigation. This is incorrect. The proponent currently holds several water permits for test purposes (to conduct test pumping of bores) and a water licence for stock purposes. The proponent has had discussions with DNRM about the authorisations needed for construction for the rail project but no authorisations for this purpose have been issued to date.	It is recommended that the proponent updates the text within this section accordingly.	Vol 4, Appendix D, Section 4	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	The EIS states: Resources in Schedule 14 of the SP Regulation applicable to the Project, which are: • leasehold land • land that is unallocated State Land (USL) • land that is State Controlled Road (SCR) • land that is road (other than State controlled) or is stock route • water taken or interfered with under the Water Act. Under the amendments to the SP Act (Sustainable Planning and Other Legislation Amendment Act 2012), state resource entitlements would not be required before making a development application. This would allow the state resource entitlement application process to proceed in parallel with the development. Although the proponent no longer requires consent, and evidence of an allocation or entitlement from the chief executive to accompany the application, the proponent must still have an allocation or entitlement to the resource, such as a water licence to take or interfere with water, or a quarry material allocation notice to take quarry materials, prior to the use of the resource.	It is recommended that the proponent notes the above comment and updates the text within this section accordingly.	Vol 4, Appendix D, Section 4.4	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	This section states that water licences will be required to pump from river or diversion bund into a dam located near a waterway in a flood plain, interact with groundwater and for watercourse diversions. If the temporary take of water is required for construction, water permits will be required for this purpose rather than water licences.	It is recommended that the proponent note that the take of water for an activity that has a reasonably foreseeable conclusion date (i.e. construction) is generally authorised by a water permit, not a water licence. It is also recommended that further information is supplied on the activities to be carried out that are described as “interaction with the groundwater” for the rail project so the correct authorisation can be identified.	Vol 4, Appendix D, Section 4.8.2	Addressed in Volume 4, Appendix C1 (Project Approvals) Section 3.6, regarding taking of water for operation the SEIS states "Investigations are ongoing and, if required, applications will be made once detailed design is finalised."
54	DNRM	Project description	Relevant Legislation and Project Approvals	Table 7 includes the authorisations (water permit and water licences) required for the investigations for the offsite infrastructure and the status indicates that these are held by the proponent. Although the proponent holds several water permits, the proponent does not hold water licences to extract water (Belyando, North Creek and Obungeena).	It is recommended that the proponent updates the text within this section accordingly.	Vol 4, Appendix D, Section 5.1	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	The EIS states that assessable development for the operational works that will be required for the offsite infrastructure and lists a number of activities that this includes. Development Permits will also be required under the Sustainable Planning Act 2009 for the construction of new bores to take groundwater.	It is recommended that the proponent updates the text within this section accordingly.	Vol 4, Appendix D, Section 5.1	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	The EIS states that works can proceed under the code of self assessable development for overland flow water using limited capacity works. The trigger for a permit under the Water Resource (Burdekin Basin) Plan 2007 is 250 ML. The self assessable development code for overland flow works does not permit interconnection of storages.	The proponent should note that the proposal to enlarge existing overland flow storages must be undertaken under the provisions of the Water Resource (Burdekin Basin) Plan 2007. In accordance with the Code for self-assessable development for taking overland flow water using limited capacity works, the storages must be independent of other storages i.e. storage works must not be connected.	Vol 4, Appendix D, Section 5.8.1	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	The table in this section indicates that water licences are needed for storage dams, totalling 20GL. The proponent should note that water licences are required for the take of water or the interference with water in a watercourse (as defined under the Water Act 2000). In-stream storages can only be constructed in accordance with the provisions of the relevant water resource plan.	It is recommended that the proponent notes that not all storage dams require Water Licences under the Water Act 2000 and the text in this section is updated accordingly	Vol 4, Appendix D, Section 6.4	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	The table in this section includes the need for “Operational work that allows taking or interfering with water”. If the waterway crossings and drainage devices require Water Licences (due to interference with flow), Development Permits will be required (if located off-lease). If waterway crossings are installed under a Riverine Proctection Permit or in accordance with the *Guideline - Activities in a watercource, lake or spring carried out by a landowner,* development permits will not be required. Also, a development permit will not be required if extraction of water from a watercourse (as defined under the *Water Act 2000*) under a water permit is carried out with a water truck or a portable pump.	It is recommended that the proponent updates the text within this section accordingly	Vol 4, Appendix D, Section 6.3	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	The table in this section includes the need for “Operational work that allows taking or interfering with water”. A development permit will also be required for the construction of bores as part of the offsite infrastructure	It is recommended that the proponent updates the text within this section accordingly.	Vol 4, Appendix D, Section 6.4	Addressed in Volume 4, Appendix C1 (Project Approvals)
54	DNRM	Project description	Relevant Legislation and Project Approvals	The table in this section includes the need for a Water Licence under the *Water Act 2000* for in-stream (i.e. a storge within a watercourse as defined under the *Water Act 2000*). The construction or reconfiguration of instream storages must meet the provisions of the Water Resource (Burdekin Basin) Plan 2007.	The proponent should note that the construction or reconfiguration of in-stream storages must meet the provisions of the Water Resource (Burdekin Basin) Plan 2007.	Vol 4, Appendix D, Section 6.4	Addressed in Volume 4, Appendix C1 (Project Approvals)

55	Australian Sustainable Business Group - Rowan Barber	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Table 8.6 outlines the average greenhouse gas (GHG) emissions predicted for each project in the Study Area. The total GHG emissions for projects in the region for which emissions data is available is 13.0 MtCO2-e per annum. The Project's contribution to cumulative greenhouse gas emissions is considered to be of low significance. However, the study does not take into account any of the emissions for transporting the product over vast distances or indeed the emissions associated with burning the product as fuel. Emissions: Carmichael Coal Mine and Rail Project Mine: 2,286,000 (t CO2-e / yr) plus 637,000 (t CO2-e / yr) for the rail project	When assessing the Environmental Impact of these types of projects it would be prudent to also include the emissions as a result of transporting coal over vast distances and the combustion of the coat by end users.	Vol 2, section 8.3.4.2 Greenhouse Gas Emissions	Scope 3 GHG emissions are not a requirement of the project ToR, as such they are not included as part of the EIS.
56	Whitsunday Regional Council	Transport	Road impacts	Further severance of the Whitsunday Regional Council LGA by increasing the frequency of use of existing and proposed railway lines to deliver coal from the Carmichael Coal Mine to Terminal 0 at the Port of Abbot Point using existing and proposed rail lines in Whitsunday Regional Council's Local Government Area.	Mitigation measures in the form of developer contributions to the construction, upgrade or maintenance of affected roads and intersections.	Vol 3, 11 Transport 11.2.3 and 11.3.5.3 (Rail Chapters)	The Carmichael Coal Mine and Rail Project included the proposed rail line joining into the existing Aurizon rail network south of Moranbah. The Assessment did not include, and was not required to include impact assessment on the existing rail network. Impact assessment of proposed upgrades to the existing rail network are being undertaken by others and will included assessment and mitigation of impacts to road crossings associated with those parts of the network. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
56	Whitsunday Regional Council	Transport	Road crossings	Interruption of relatively well used State Controlled roads by increased frequency of trains from the Carmichael Coal Mine to Terminal 0 at Port of Abbot Point: • Bowen Development Road, Collinsville (two instances) • Bruce Highway, Merinda (two instances)	Gratuitous developer contributions to the construction, upgrade or maintenance of indirectly affected local roads within Collinsville and Merinda to offset the affect on State controlled roads.	Vol 3, 11 Transport 11.3 (Rail Chapters)	The Carmichael Coal Mine and Rail Project included the proposed rail line joining into the existing Aurizon rail network south of Moranbah. The Assessment did not include, and was not required to include impact assessment on the existing rail network. Impact assessment of proposed upgrades to the existing rail network are being undertaken by others and will included assessment and mitigation of impacts to road crossings associated with those parts of the network. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
56	Whitsunday Regional Council	Noise and Vibration	Noise and vibration	Increased frequency of trains from the Carmichael Coal Mine to Terminal 0 at the Port of Abbot Point using existing and previously proposed rail lines in Whitsunday Regional Council's Local Government Area will increase noise in residentail areas with significant sensitive noise receptors • Collinsville (adjacent to existing railway) • Merinda (adjacent to existing railway)	Especially in residential areas affected by noise impacts in Collinsville and Merinda: • Noise buffers in the form of earth mounds with associated Stormwater Management Plans where appropriate; otherwise • Noise buffers in the form of solid fencing where too close to residential areas for mounds. Inclusion of vegetative screening to maintain scenic amenity.	Vol 3, 9 Noise and Vibration (Rail Chapters)	Assessment of impacts associated with the upgrade of existing rail lines or new rail lines is outside the scope of this EIS. The assessment of upgrades to the existing rail network is the responsibility of Aurizon. Assessment of impacts associated with new rail lines is the responsibility of those proponents.
56	Whitsunday Regional Council	Air quality	Coal dust management	Increased frequency of trains from the Carmichael Coal Mine to Terminal 0 at the Port of Abbot Point using existing and proposed rail lines in Whitsunday Regional Council's Local Government Area will increase dust generation and fugitive coal dust emissions.	Addressed in the Air Quality Management Plan and Greenhouse Gas Emissions and Energy, but additionally: • Mitigation measures to allow Council to manage air and water contamination levels, especially in regard to stormwater runoff in catchment areas to protect water quality.	Vol 3, 13 Draft Environmental Management Plan, Section 13.4 (Rail Chapters)	The assessment of existing rail lines is outside the scope of the Project ToR
56	Whitsunday Regional Council	Transport	Road impacts	88A Bowen Developmental Road is described as a 'district' road. Clearly if this road were unavailable, there would be more than a 'district' effect. Based upon 2011 data, this road has an AADT greater than 1000 vehicles at all survey locations.	Modify the description to 'regional road'	Volume 2, section 11.2.1, Table 11-3	Comment noted.
56	Whitsunday Regional Council	Transport	Hazard and Risk	The text provided places little importance on road crashes, with no crash data presented in this section. The reader is instead referred to Section 3.1.7 of Volume 4. The summary of Section 3.1.7 reads: "The key trends identified from the review of road corridor impacted by the proposal are: • Most roads are over 30km in length, are high speed travel environments and have at least one recorded fatality. • Single vehicle crashes are a significant contributing crash trend along with crashes involving animals and fatigue."	Include a summary table of crashes in Volume 2, including an identification of hospitalisation crashes as a separate category.	Volume 2, section 11.2.1.4	Summary tables of crash data were provided in EIS Volume 2 Section 11 Transport; EIS Volume 3 Section 11 Transport and EIS Volume 4 Appendices AG and W. Similarly, the crash data was provided in Table 20.1, 2.2 and 2.3 of the revised TIA in SEIS Volume 4, Appendix P.
56	Whitsunday Regional Council	Transport	Road impacts	Section 11.3.6.1 states: "Table 11-19 shows that the expected increase in traffic associated with the construction of the Mine can be accommodation on the state roads which would provide access to the site. However, a number of mitigating measures have been identified to ensure that transport and traffic impacts arising from the construction are minimised. These measures will be incorporated through the development of the Construction Traffic Management Plan." this section of the document provides little measurable detail beyond low cost traffic signage and a community awareness programme, which appears inconsistent with there being a good understanding of how to manage impacts of a 90-year operation.	Some detail should be provided in the EIS of the specific mitigation measures that are proposed. For example, fatigue has been identified in the EIS as an issue. Across Queensland, the number of fatalities as a result of crashes involving heavy freight vehicles increased from 54 in 2011 to 73 in 2012. It would be expected that construction of some fatigue management measures, e.g. truck stopping places or rest areas would be necessary to mitigate project impacts.	Volume 2, section 11.3.6	Mitigation measures in regards to road safety were provided in EIS Volume 2 Section 11 Transport; EIS Volume 3 Section 11 Transport and EIS Volume 4 Appendices AG and W. Adani will consult with DTMR, and QPS and other proponents (where applicable) regarding the need for additional 'park up' rest areas and road signage. Relevant management and mitigation measures regarding fatigue management will be identified from consultation and will be incorporated into the revised traffic management plan for the Project (Rail). This commitment was made in the SEIS Volume 4, Appendix G, Project Commitments

57	Neilan	Nature Conservation	Black-throated Finch	The southern subspecies of the Blackthroated finch is listed as 'Endangered' under the: • Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) • schedules of the NSW Threatened Species Conservation Act 1995 (TSC Act) • Queensland Nature Conservation Act 1992 (NC Act) A listing of endangered means that it has been scientifically determined that the Blackthroated Finch southern subspecies faces a very high risk of extinction in the wild in near future unless the adverse processes impacting upon the species persistence over its current range are mitigated. In particular the listing of endangered under the EPBC Act is related to the "severe reduction in numbers" resulting in a decline of occurence of 59% for the subspecies over the past decade. (httR:LLwww.environment.gov.auLbiodiversi!;YLthreatenedLsReciesLRoeghila-cinta-cinta.html accessed online 11.02.13).	Do not approve the development of the Carmichael coal mine unless any impacts of the development on the persistence of populations of southern subspecies of the black-throated finch within the mine area can be demonstrated to be mitigated in line with recovery actions in the "National recovery plan for the Black-throated finch southern subspecies (Poephila cincta cincta)" (Black-throated Finch Recovery Team, Department of Environment and Climate Change (NSW) and Queensland Parks and Wildlife Service 2007.) In particular further research is required to identify and quantify breeding requirements and threats to key breeding areas and feeding and other habitat requirements in the proposed site. The distribution and abundance of the subspecies in the area needs to be quantified by greater survey effort over space and time such that areas to ensure the species survival can be set aside for conservation. Without first obtaining in-depth independent baseline data on the population ecology of the species within the area an adaptive management approach prioritises the mine development over the species persistence.	Vol 2, Section 5.1.2.6 Vol 4, Appendix N3, page 5-1	Comment noted. Further information regarding BTF monitoring is located in the Black-throated Finch Monitoring Report prepared for the SEIS (refer to SEIS Volume 4 Appendix J2 Black-throated Finch Monitoring Report).
57	Neilan	Nature Conservation	Black-throated Finch	Given the serious decline in numbers of Blackthroated Finch southern the site of the proposed Carmichael mine and surrounds is important habitat for the maintenance of the subspecies and careful consideration and planning needs to occur before any "development of this area is given approval by the statutory authorities charged with the safeguard of biodiversity. To quote the EIS "Given the intact nature of the habitat and REs in the region, the spatial extent of the area and the good condition of the landscapes, this sub-population Blackthroated Finch (southern) in the area that encompasses the Study Area and the Project (Mine), is potentially significant." (5-1) Fragmentation and loss of habitat is the greatest threat to biodiversity worldwide. An adaptive management approach with staged construction of the mine and infrastruction will not prevent loss of or fragmentation of Blackthroated finch habitat.	(as above)	Vol 4, Appendix N3, page 5-1	Comment noted. Further information regarding BTF monitoring is located in the Black-throated Finch Monitoring Report prepared for the SEIS (refer to SEIS Volume 4 Appendix J2 Black-throated Finch Monitoring Report).
58	Mackay Regional Council	Social	Workforce management	Any increase in mining activity, whether within the Mackay Regional Council area or in an adjoining council area has Significant implications for the Mackay region, particularly its local road network, regional airport and accommodation (Section 3.3.3). Whilst a drive in-drive out (DIDO) and bus in-bus out (BIBO) workforce is contemplated in the EIS, it is apparent that the preference is for a fly in-fly out workforce. A detailed analysis of the impacts of a range of workforce arrangements and in particular a social impact assessment of FIFO arrangements has not been included in the EIS.	Therefore Mackay Regional Council recommends that the EIS considers a range of workforce arrangements and includes an analysis of the social, economic and other impacts on the Mackay region in the EIS. The effect of such impacts should be explored in greater detail in the EIS and extend beyond the current study area.	Vol 1, Section 3.3.3	Impacts on the regional study area will be monitored by Adani as stated in SIA SEIS Volume 4 Appendix D1 Section 8.5 and 8.6 and SIMP SEIS Volume 4 Appendix D2 Section 3.4, 3.5.
58	Mackay Regional Council	Cumulative Impacts	Transport and Social infrastructure	In Section 8.3.7.3, there is mention of the cumulative impacts on domestic and regional airports, but no information is provided detailing the impact or mitigation. The impact of the Carmichael Coal Mine and Rail Project on the air network (and subsequently local and state road networks) is subject to the development of an airstrip to facilitate the movement of personnel. It is difficult to ascertain and therefore comment on this matter when there is minimal discussion as to how the arrangement of a private airstrip would operate. Any increase in air activity to and from Mackay Regional Airport may place further loads on the local road network, which should be assessed.	In Mackay Regional Council's submission on the Draft Terms of Reference dated 28 March 2011 a number of points were raised, but subsequently not detailed in the EIS. In light of Council's observations as outlined above it is recommended that Section 3 and Section 8 of the EIS give greater consideration to the cumulative impacts of the Carmichael Coal Mine and Rail Project on the following: • Capacity and future demand of the Mackay Base Hospital; • Trunk infrastructure, accommodation, education and community facility provision in the Mackay region; • Industrial land requirements to cater for industries that service the mines, • Capacity of emergency services; • Road, rail, air and particularly port network.	Vol 1, Section 8.3.7.3	Comments noted. A revised Traffic Impact Assessment has been prepared for the SEIS (refer to SEIS Volume 4 Appendix P Traffic Impact Assessment Report). This report documents the impacts of the Project on road and rail infrastructure. Impacts resulting from Port infrastructure is not within the scope of the EIS. The cumulative assessment prepared for the SEIS has been undertaken in consultation with the OCG and DTMR. Capacity of trunk based infrastructure is further discussed in the SIA material undertaken for the SEIS (refer to SEIS Volume 4 Appendix D1 Revised Social Impact Assessment Report and D2 Revised Social Impact Management Plan).
59	Graham	General Comment	General comment	EPC 1080 and 1690 cover approximately 48000HA and approval is being sought to remove much of its vegetation and soil, taking away the habitat of all present life depending on it; remove the coal, sequestered along with the overburden and tailings by Sun and Earth; and appropriate more habitat and water on PH1491/L662 to facilitate this. The footprint in terms of non renewable resources is huge, even if one extrapolates from the figures used for quantifying Greenhouse emissions from these activities: and there is yet the footprint for infrastructure and diesel to rail it; ship it; and presumably hawk it round the world before its eventual combustion.		Reports relating to EPC 1080 and 1690 Vol 4, Appendix N1, Section 5.2	Comment noted.
59	Graham	Nature Conservation	Survey effort	The so called stakeholders have the opportunity to submit their response. Springs and rivers; soils and land forms; flora and fauna are dependent on our support in this instance, and the terms of reference require that these are described, after proper research and field studies as well as then stating the likely effects of the proponents activities and how and where they will be mitigated according to Government requirement. The terrestrial report claims to have carried out the requirements of the terms of reference respecting flora and fauna. It is unfortunate that the proponent didn't contemplate the meaning of either flora or fauna before commencing because lack of understanding of even these terms has resulted in a highly inadequate description of the existing life on EPC 1690 and 1080 as well as the off-site infrastructure area. Furthermore the terms of reference required full field studies of all vegetation communities unless there were records of authentic field studies of these communities that had actually been carried out in the vicinity: and my understanding of this is that these would need to have been carried out in the area covered by EPC 1080 and 1690.		Reports relating to EPC 1080 and 1690 Vol 4, Appendix N1	Comments noted. An updated ecology assessment report has been undertaken for the Project. This report covers areas EPC 1080 and 1690 (refer to SEIS Volume 4 Appendix J1 Revised Ecological Assessment Report).

59	Graham	Nature Conservation	Assessment methodology	This was the basis of research before the likely effects of the proponent's schemes could be considered as well as their mitigation, and it is apparent to me that these studies are thin; exclusive; or even non existent. It was actually tiresome and perplexing to distinguish between observations from field studies, that is to say reality; and descriptions of community types copied from archives; that is to say the pattern or prototype for classification. Furthermore whilst some 'comments' include many types of vegetation others are exclusive: so much so that I then realised that the proponent had not undertaken the task properly. (e.g. Table 2-2 10.3.6 1080 study area 1,141HA: comments mentions this is one of the major communities in the 1690 study area but the e. brownii community incredibly seems to consist of….e. brownie.) Additionally it would be helpful to know whether 'representative photographs' which are presented with the 1690 field study comments represent a forgotten or broken camera; or an apology for the quality and content of the photograph. (eg. 2-60)		Reports relating to EPC 1080 and 1690 Vol 4, Appendix N1	Comments noted. An updated ecology assessment report has been undertaken for the Project (refer to SEIS Volume 4 Appendix J1 Revised Ecological Assessment Report).
59	Graham	Nature Conservation	Survey effort	I acknowledge that cymbidium canaliculatum (1) was recorded (in EPC 1080 studies) as well for instance as a clump of native bluebells but on the whole there is far too little observation of lower canopies, particularly at ground level, and as old growth vegetation was being studied, one tree orchid was rather disappointing. Not only for their own sake should they be observed and noted; but because so many insects including bees (of which there are over 1000 native to Australia) are interdependent with the heathers and annuals we think of as wild flowers as well as the grasses and sedges which are sometimes mentioned.		Reports relating to EPC 1080 and 1690 Vol 4, Appendix N1, Section 2.3	Comments noted. An updated ecology assessment report has been undertaken for the Project (refer to SEIS Volume 4 Appendix J1 Revised Ecological Assessment Report).
59	Graham	Nature Conservation	Survey effort	When I looked at the fauna studies in EPC 1690 (and later in EPC 1080) I noted that invertebrates seemed to have been excluded. I would like to mention here that (northern) Jalmenus Evagoras Eubulus is vulnerable in Queensland, hardly surprising as its habitat happens to be old growth Acacia Harpophylla (this butterfly in endangered in New South Wales.) Amphibians and reptiles have been included as well as birds and mammals but the food source or stimulators of these creatures has not been considered; for instance the butterfly mentioned above is co-dependent with a certain ant as well as the brigalow; and kingfishers and kites include dragonflies in their diet. Importantly many finches are also known to eat small insects as well as vegetation and I imagine that the black throated finch may not differ here	There is a quaint lack of acknowledgement of inter-dependence as well as codependence in the rather isolated way in which the super beings; namely at risk or endangered vegetation communities as well as fauna have been studied and considered particularly for the purpose of mitigation. The proponent needs to become acquainted with the notion, for instance, that black throated finch fly in mixed-species flocks. The photographs and strategies offered for other habitats suggest that, like caged birds, these finches simply need to have the right trees and ground cover and they will flourish elsewhere; but reality is far more complex. I suggest that the proponent funds postgraduate students interested in carrying out the necessary studies fully, in different seasons; and given the size and ramifications of the proponents intentions this is not an unreasonable suggestion.	Reports relating to EPC 1080 and 1690 Vol 4, Appendix N1, Section 2.4	Comments noted. An updated ecology assessment report has been undertaken for the Project. This report covers areas EPC 1080 and 1690 (refer to SEIS Volume 4 Appendix J1 Revised Ecological Assessment Report).
59	Graham	Nature Conservation	Assessment methodology	From the results of what studies were actually undertaken, I wish to draw attention to some that were reported but don't have super-being status in Queensland. Pseudomys desertor for instance was reported in the EPC 1690 report as the most commonly caught of the marsupial 'mice' and there were 17 lagorchestes conspicillatus in the EPC 1080 report. The first is critically endangered in New South Wales and the second is listed as 'at risk' on the IUCN list (acknowledge by the proponent.) Either both were particularly keen to be trapped or, given the numbers of really 'common' fauna caught - the majority were presumably too clever to be caught - we must assume that these results indicate a vibrant eco sphere for this region…mindful that the proponent's design would obliterate it.		Reports relating to EPC 1080 and 1690 Vol 4, Appendix N1 Section 2.4.3	Comments noted. An updated ecology assessment report has been undertaken for the Project. This report covers areas EPC 1080 and 1690 (refer to SEIS Volume 4 Appendix J1 Revised Ecological Assessment Report).
59	Graham	Nature Conservation	GAB Springs	As with the terms of reference in the terrestrial report I submit that those for this GAB springs complex have not been fulfilled. Whilst studies and their reports are presented by the proponent as obviating the need for further study those studies were conducted at a time when the greatest threat to this complex was the ramification of the previous enclosure to the Joshua cluster; not draw downs from Carmichael River by mega mines as well as dust carried on the prevailing easterly winds. This was actually the first report I looked at because I was only familiar with GAB flowing bores (now capped) and I was dismayed to see that this report claims that Barcaldine is situated 90k from this site. Please could the proponent correct this; I would hate to think that someone set off either way in a plane with a tank filled with enough fuel for 90k! In this report is mentioned not only the dismissive suggestion that the present rating of these springs would be lower if reassessed; but pertinently for my point: that those who carried out many of the studies believe that more rare fauna species may be found if further studies were to be undertaken. The proponent mentions that two invertebrates from the old studies, both unique to the system, from the old studies.	I submit that new studies should be undertaken, particularly as there are a number of rare and endangered species already recorded: had the proponent inquired as to whether those who have carried out studies considered that their studies would be enough for proper ecological assessment for a mega mine a few kilometres or so away it is extremely unlikely that their responses would have been affirmative: Again post graduate students would be ideal to carry this out.	Vol 4, Appendix N2 Doongmabulla Springs Complex Report Appendix O1	The revised SEIS Nature Conservation and MNES Chapters will include information on GAB wetlands from the surveys at Doongmabulla springs (Refer to SEIS Volume 4 Appendix J3 Springs Ecological Assessment Report), Waxy Cabbage Palm survey (Refer to SEIS Volume 4 Appendix J4 Waxy Cabbage Palm Assessment Report), and the revised groundwater report (Refer to SEIS Volume 4 Appendix K1 Updated Mine Hydrogeology Report).
59	Graham	Water resources	Surface water	In addition concerning the problems of draw down and mine consumption of local stream or river water I submit that this is also under researched; overly assumptive area of the EIS which requires careful consideration and I have the following to add: Aquifers, Rivers, and Streams. Here the proponent, along with the mean mining fraternity, demonstrates the singular notion that these can be redirected (e.g. eight mile creek) and hugely deprived of their flow; the trees and vegetation that interweave with their veins; suffocated by air filled with dust from overburden or coal, and a regular dose of 'treated' void water; and somehow flow on, underground or above, unaffected. From my own observations of our creeks and streams I know much is held up in veins, even in Australian conditions, and that the flow is different according to atmospheric pressure and other causes which I don't understand.		Vol 4, Appendix N2 Doongmabulla Springs Complex Report Appendix O1	No information is requested in the submission. Refer to Volume 4 for updated assessment information.

59	Graham	Water resources	Surface water	I also wish to mention the in-stream water storages. This is one of the exasperating in consistencies of the proponent: In the EPC 1080 section of the Terrestrial Survey the proponent states that the eight mile creek will be diverted as well as dams enlarged of newly constructed: this is when I learnt the term in-stream storage having finally located some strange black squares on all of the maps and deduced no doubt the obvious. In the mean time I had looked through other reports vainly trying to find specifications for dams. Perhaps obfuscated in Volume 4 somewhere the proponent has stated the size and design of the tanks being built, presumably open earth ones; but I am concerned that these tanks may continually interrupt the flow of the ephemeral streams into the Carmichael. Ephemeral is not a helpful term: some are quasi permanent flows or contain many water holes; others, likely in this case, seasonally flow and water remains for months in rock holes; the remainder behave more like 'gullies' and are truly ephemeral. Carmichael is partly fed by the Doongmabulla Springs, water quality of which is different, hence the plants including waxy cabbage palm both at the Springs and further down Carmichael River. Depriving Carmichael River of much of the water from North Creek and Obungeena Creek - and presumably Eight Mile if it hasn't been diverted completely away from North Creek - through the construction of earth tanks may pose serious environmental problems given the amount of water that the proponent speculates will be drawn form Carmichael River.	Figures for water use need to be quantified in certain terms. The proponent needs to state what will be used, not offer rough estimates. Once again, not enough information has been assembled the proponent should supply the size and design of the tanks; the mean flow of the ephemeral streams according to rainfall e.g. flow per 100ml fall from heavy as well as light rain, as well as water held underground.	Vol 4, Appendix N2 Doongmabulla Springs Complex Report Appendix O1, section 4.2.2.1	Updated water use quantities are detailed in the SEIS Water Balance Report Appendix K2. The impacts on waterway ecology are located in the SEIS Springs Ecological Assessment Report Appendix J3, SEIS Waxy Cabbage Palm Assessment Report Appendix J4 and the SEIS Revised Ecological Assessment Report Appendix J1.
59	Graham	Water resources	Waterway diversions	There is also the matter of ephemeral streams which will be destroyed through the clearing as they are on EPC 1690 and 1080 and are shown covered by black tree -clearing lines on the proponents map. One of these streams appear to flow SW towards Dylingo and Cattle Creeks. If the watershed does not coincide with EPC 1690 which seems likely from the design of the boundary and this stream drains part of the cleared area there will be further upstream problems at Doongmabulla.	This needs to be investigated by the proponent.	Vol 4, Appendix N2 Doongmabulla Springs Complex Report Appendix O1, Section 4.2.2.1	Cleared or disturbed land will be managed in accordance with the site Construction Environmental Management Plan and the Erosion and Sediment Control Plan. The runoff from all disturbed areas will be directed to sedimentation basins where it will be either reused or tested and treated before discharge into the Carmichael River. Only undisturbed areas will continue to discharge into the waterways.
59	Graham	Social	Workforce accomodation	I have already mentioned in-stream storage tanks. I now refer to the airport; industrial area; and workers accommodation village which together may cover 600 or so HA. Using the proponents example I have looked at the size of EPC 1080 and 1690 and compared the size of the off-site infrastructure and made an assumption…. I found a rough plan and estimate of what the proponent calls workers and workers accommodation village. What is meant by workers would be interesting to know. Are workers all those working, including the proponent; management and workers; or simply those normally termed miners; mine engineers; maintenance or construction staff; and so forth? The accommodation information is not specific, but apparently it accommodates 1000.	This is a large village by regional standards and deserves more detailed design and information than has been provided.	Vol 1, Section 3 and 4 Vol 4, Apps F and G Section 2.3	Further updates are available in Integrated Housing Strategy included in the SIMP SEIS Volume 4 Appendix D2. Comments regarding the workers accommodation village are noted and addressed in the revised SIA and SIMP (SEIS Volume 4 Appendices D1 and D2)
59	Graham	Social	Workforce accomodation	If there are details of material to be used, quantities and source, to build the airport, industrial area and accommodation village they eluded my search. Is there to be a small hospital I wonder; and much more, including whether the 'village' would be gated.	If the proponent has all these details in mind they need to be stated in the EIS; otherwise the same recommendation regarding insufficient information pertains: more information.	Vol 1, Section 3 and 4 Vol 4, Apps F and G Section 2.3	Comments regarding the workers accommodation village are noted and addressed in the revised SIA and SIMP (SEIS Volume 4 Appendices D1 and D2)
59	Graham	Greenhouse Gas Emissions	Assessment methodology	The proponent has lumped diesel driven activities together; Electricity driven ones; and so on.	This is understandable for explosives but the other activities should be separated so that the estimates can be properly scrutinised.	Vol 4, Appendix T, Section 2	Noted.
59	Graham	Greenhouse Gas Emissions	Assessment methodology	Whilst the proponent has mentioned soil sequestration of carbon regarding rehabilitation; no attempt has been made to implement studies of the soil carbon presently sequestered where removal of vegetation; including pulled country and top soil may release more carbon than accounted for, since management differences affect amounts of carbon sequestered.	Measurements should be taken and the proponent should initiate this.	Vol 4, Appendix T, Section 2	Noted.
59	Graham	Greenhouse Gas Emissions	Greenhouse Gas Emissions	Mitigations proposed are pitiful.		Vol 4, Appendix T, Sections 3.2.3 and 3.3.3	Noted
59	Graham	Greenhouse Gas Emissions	Project alternatives	The largest emitter is clearly electricity and yet the proponent makes no attempt to research and consider the obvious: a solar thermal plant such as is working in Spain or California; wind, which may be unfeasible if winds are weak at Moray Downs; or solar voltaic panels, even as a partial contributor. There is no indication that any of this was considered.		Vol 4, Appendix T, Sections 3.2.3 and 3.3.3 Vol 2, section 2.7	Noted.
59	Graham	Greenhouse Gas Emissions	Project alternatives	Bio-fuel has drawbacks: The Carmichael Mine and Rail project if authorised will rob the catchment of 20 - 30% of allocated water so diesel trees, for instance, should not be planted; and whilst empty coal wagons might be able to haul wheat based or cane based fuel these crops should be supplying the food chain which is being deprived of the cattle that would otherwise be grazing on the project area. I am afraid that the proponent has failed once more not only to meet an opportunity for innovation.	Fulfil requirements by providing more information regarding the quantification of emissions.	Vol 4, Appendix T, Section 2	Noted.
59	Graham	General Comment	General comment	May I end this submission expressing the hope that the proponent is not allowed to put plans as expressed in the EIS into reality. If this proposal is to go ahead: burdening the Barrier Reef with still more problems from the mine and its coal corridor the environment will groan; both local and global. Nature deserves so much more consideration than this EIS.		Vol 1, Section 2.1	Noted.

60	BirdLife Southern Queensland	Greenhouse Gas Emissions	Climate Change impacts	Well beyond any parochial anxieties expressed for the wellbeing of Queensland's countryside and the welfare of birds we are concerned about Climate Change which threatens birdlife worldwide. There is now abundant and irrefutable evidence we are experiencing historically unprecedented weather events throughout the world, even here in Queensland. The issues remain, whether we are talking about Adani Carmichael, Waratah's Alpha North and China First, Vale's Degulla or the three mega mines by GVK.	It is no longer acceptable to plunder the Australian landscape in order to prop up non-renewable energy consumption by other countries, rather than encouraging them to invest in a sustainable, renewable energy.	Vol 2, Sections 3 and 8	Noted
60	BirdLife Southern Queensland	Greenhouse Gas Emissions	Assessment methodology	The Queensland Resources Council has refuted estimations of CO2 emissions; other reports insist these levels are estimated from the information source base of various mining companies. On whom do we rely for facts?		Vol 4, Appendix T, Section 2	Noted
60	BirdLife Southern Queensland	Project description	Port facilities	UNESCO called for a moratorium on new port developments in the Great Barrier Reef World Heritage Area.		Vol 1, Section 2.2	The cumulative assessment prepared for the SEIS does not consider the port as it is outside the scope of this Project's TOR.
60	BirdLife Southern Queensland	Cumulative Impacts	General comment	Is it sound practice to permit the progress of mega mines, irrespective of the possible confirmation of negative findings from the governments Strategic Assessment process? With roughly 240 Mtpa of proposed new coal mines, the Galilee Basin is a globally significant fossil fuel time bomb, with our energy hungry developers in charge of the touch paper.		Vol 1, Section 8.4	Comment noted.
60	BirdLife Southern Queensland	Cumulative Impacts	General comment	With 120 proposed new coal mines or mine expansions that if built, would see a tripling of Australia's coal exports by the end of this decade, it is with great concern we view the wellbeing of our birdlife. It is inappropriate to consider the plight of the regionally endemic Black-throated Finch or any other species in isolation. All species are part of the whole of environment; many species move throughout Queensland and adjacent states and territories. We are committed in legislation to the safe keeping and protection of all living aspects of our natural environment by our signing of Treaties such as JAMBA and RAMSAR.		Vol 1, Section 8.4	Adani has been in consultation with Black-throated Finch Recovery team and DSEWPaC. A four part monitoring program was developed comprising of (i) Regional distribution (species distribution modelling); (ii) Regional distribution (surveys); (iii) Local monitoring (observational) on the Mine Area; and (iv) Local Monitoring (detailed) on the Mine Area. A detailed plan was prepared for the Local monitoring) on the Mine Area and th2 first survey was conducted in May 2013. The results are presented in the SEIS Volume 4, Appendix J2. This monitoring will continue during construction and operation of the mine, and the focus and intent of the monitoring will be guided by, and contribute to, the Black-throated Finch Species Management Plan following the principled of adaptive monitoring and management.
60	BirdLife Southern Queensland	Water resources	Water quality	How do we mitigate against a mine of this dimension, including out of pit waste dumps and mine water management dams? Water from the current floods is now in to our river systems and flowing towards the Great Barrier Reef.		Vol 4, Appendix Q, Sections 5 and 6	No information is requested
60	BirdLife Southern Queensland	Air quality	Coal dust management	The channel and riparian zone of the Carmichael River will be buffered by 1km and protected by a levee. A study by James Cook University in Townsville well demonstrates the dispersal of coal dust and its destructive effects on marine organisms. What will be the cumulative effects of these constant particulates accumulating in creeks and river systems in this channel country?		Vol 2, Section 7 Vol 4, App S	Adani will prepare a Coal Dust Management Plan identifying control measures to mitigate the emission of dust from loaded and unloaded coal trains. When operating on any Aurizon Operation Ltd (Aurizon) railway line, Adani will comply with the recommendations stated in the Aurizon (2010) Coal Dust Management Plan. Please refer to SEIS Volume 4, Appendix W for the Rail EMP, section 6.5.3 for Rail Operations related to coal dust.
60	BirdLife Southern Queensland	Social	Social Impact Assessment	We note Adani when quantifying 'the social impacts', used its own material collected during negotiations with land managers, because there were insufficient case studies to reflect the concern of the community members. Sixteen members of BirdLife SQ surveyed ten properties (RE. 10.5.5) in the Galilee Basin in April 2012. Of particular concern was Bimblebox Nature Refuge. Without equivocation all land holders approached by our group were welcoming and supportive of the concerns of BirdLife and indeed expressed concern for the health and well being of the greater natural landscape in which they function as farmers and as people in community. To suggest the lack of base line social studies supports mining is misguided (without truth). Many residents of the Galilee feel impotent and powerless. Rural people who have not dealt previously with resources companies feel totally overwhelmed. They also express vividly the State Government has its own agenda; they are not part of it. In fact 'they don't care'. In that regard we must expect to represent our birdlife since they do not have a voice in this social evaluation save in terms like 'offsets'.		Vol 1, Section 3 Vol 4, App F	Comment noted.
60	BirdLife Southern Queensland	Nature Conservation	Bygana West Nature Refuge	Adani Carmichael Mine proposes to mine Bygana West Nature Refuge. All conservation groups would reasonably expect that Nature Refuges be exactly that and exempt from mining. However, as isolated pockets of vegetation surrounded in open cut mining their success would be diminished.		Vol 2, Section 5.2	Noted.
60	BirdLife Southern Queensland	Draft Offset Strategy	Proposed offset areas	For the listed species of birds contained in the Adani Carmichael EIS document, how can the Adani environment team justify producing one portion of Moray Downs as compensation for the total annihilation of 46,520 ha of a valuable RE.10.5.5 committed to coal mining?		Vol 2, Section 5.2 Vol 4, Appendix AH, Section 3	Submission noted. Please refer to Volume 4 Appendix F for the updated Offsets Strategy.
60	BirdLife Southern Queensland	General Comment	General comment	In conclusion we do not support or promote mega mines of this nature as good for our national wellbeing or at all supportive of nature and a safe environment. The Galillee supports major water bodies like Lake Galilee and Lake Buchanan and is surrounded by significant preserved areas like Carnarvon and Expedition National Park. Their future should not be placed at risk.		n/a	Opinion noted.
61	DATSIMA	Social	Workforce management	The EIS states that recruitment of the workforce during the construction stage will be the responsibility of the contractors. Indigenous employment should be included during construction stage of the project.	A requirement that all contractors have an Indigenous employment strategy be included which should form part of the contract between proponent and the contractors during construction stage.	7.6.3 Recruitment, Education and Training (page 7-10) Vol 4, Appendix F, Section 5.3.3, App G	Indigenous participation is detailed in the SIA SEIS Volume 4 Appendix D1 Section 8.6 and SIMP SEIS Volume 4 Appendix D2 Section 3.5.

61	DATSIMA	Social	Workforce management	No set employment and training targets have been set.	That Indigenous employment and training targets for the construction stage be included in the Social Impact Management Plan. That Indigenous employment and training targets for the operation stage be set upon the final investment decision.	7.6.3 Recruitment, Education and Training (page 7-10) Vol 4, Appendix F, Section 5.3.3, App G	Indigenous participation is detailed in the SIA SEIS Volume 4 Appendix D1 Section 8.6 and SIMP SEIS Volume 4 Appendix D2 Section 3.5. The Project Commitments Register (SEIS Volume 4, Appendix G) was updated to include commitments to engage with DATSIMA to develop an Indigenous Participation Plan and to assist with the recruitment and retention of groups traditionally under-represented in the mining industry including women, indigenous persons and people with a disability. Commitment register revised to state that social impact management strategies will be finalised with key stakeholders prior to the commencement of construction.
61	DATSIMA	Social	Workforce management	There is a need to ensure that the Workforce Management Plan includes Indigenous participation.	It is suggested that the Indigenous Participation include: • Indigenous cultural awareness training. This will build understanding and knowledge of Indigenous relations and culture at the individual and business unit level • demonstration of support for Indigenous events, celebrations and awards • local, regional and state recruitment strategies, processes and systems that are culturally sensitive to the recruitment of Indigenous people • tailored information provisions to Indigenous people relating to job opportunities available • set minimum targets for employment of Indigenous people during all stages of the project • development of an Indigenous mentoring program • development of an up-skilling program for new and existing Indigenous employees • development of retention processes and procedures that represent the lifecycle of employment setting out how Indigenous businesses will be included in the proponent's supply chain • embedding the Indigenous assistance strategy into all operations areas • the creation of a pathway between Indigenous school students and work • how the proponent will build a quality relationship with the local Indigenous community • a requirement that all sub-contractors have an Indigenous employment strategy	Vol 1, 7.6.3 Recruitment, Education and Training (page 7-11) Vol 4, Appendix G, Section 3.4	Indigenous participation is detailed in the SIA SEIS Volume 4 Appendix D1 Section 8.6 and SIMP SEIS Volume 4 Appendix D2 Section 3.5. Comments regarding indigenous participation are noted and addressed in the revised SIA and SIMP (SEIS Volume 4 Appendices D1 and D2). Adani will continue to work closely with DATSIMA to finalise the SIMP.
61	DATSIMA	General Comment	Correct reference/ cross reference	The word Indigenous in some parts of the document is written with a lower case "I' rather than a capital letter.	Each time the work Indigenous is written, it is to have a capital letter.	Various	Noted.
61	DATSIMA	Social	Workforce management	The EIS focuses on the local Indigenous community, however, with most of the employees being sources from outside of the local area; there is no indication in the EIS as to how Indigenous Fly In - Fly Out (FIFO) workers from the wider Queensland pool will be attracted to the project, including those currently not participating in the job market.	That the EIS explains how Indigenous FIFO workers from the wider Queensland pool will be attracted to this project, including those currently not participating in the job market.	Vol 4, Appendix F, Section 5.3.1 Vol 4, App G	Indigenous participation will be part of contractor conditions responsible for the FIFO workforce. Comments regarding indigenous participation are noted and addressed in the revised SIA and SIMP (SEIS Volume 4 Appendices D1 and D2). Adani will continue to work closely with DATSIMA to finalise the SIMP.
62	Luke	Water resources	Groundwater	Loss of under ground water supply to bores and under ground streams	Monitor/provide piped water to areas lost	Vol 2, Section 6.4	Refer to the SEIS Hydrogeology Report (refer Section 7.6.2). Pre-operational monitoring and monitoring of groundwater levels outside of the Mine Area will be carried out as part of the Environmental Monitoring Plan to be developed for the Project (Mine). Should significant effects on registered bores used for water supply be identified, Adani will make good any loss in water availability in conjunction with the landholder.
62	Luke	Water resources	Flooding	Banking up sides of Carmichael River, type of bank and effects on flood out country	Go further out off channel. Make grassed mounds	Vol 2, Section 6.4	The design of the levees have been documented in the flood report (SEIS Volume 4 Appendix K4). Expected afflux has also been reported in this document.
62	Luke	Air quality	Coal dust management	Coal dust on all surrounding grazing grass.	Compensate people No mine	Vol 2, Section 7.3	Opinion noted.
62	Luke	Social	Workforce management	Jobs for our children, town, availability for everyone	Employ locals	Vol 4, Appendix G, Section 3.4	Indigenous and local participation is detailed in the SIA SEIS Volume 4 Appendix D1 Sections 8.6, 8.7 and SIMP SEIS Volume 4 Appendix D2 Sections 3.5 and 3.6.
62	Luke	Water resources	Flooding	Rail line across Belyando River, backing it up	Stay on west side of river, until it narrows up	Vol 3, Section 6.1.3	Noted. Please refer to the updated Flood Report under the SEIS (Volume 4 Appendix S1). SIA and SIMP updated with details of landholder consultation, refer to SEIS Volume 4, Appendices D1 and D2.
62	Luke	Economics	Regional business opporunity	Effect on local businesses	Get as much locally as possible No fly in work force	Vol 1, Sections 3, 4 and 6.2	Adani has provided a commitment in the SIMP for the development and implementation of local procurement policies. The SIMP will form part of the CG approval and therefore will be applicable for the life of the Project.
62	Luke	Social	Community values and change	What are you going to do for the local community, build	Join in with community	Vol 4, Appendix G, Section 3.8	Local participation and community development program address local contribution as detailed in the SIA SEIS Volume 4 Appendix D1 Sections 8.6, 8.7, 8.9 and SIMP SEIS Volume 4 Appendix D2 Sections 3.5, 3.6 and 3.9.
63	Gillman	Nature Conservation	Fauna	The suggestion that an important population of protected species occurs provides relevance to threatened species only. Many species fall below the radar, their presence and function within a regional eco-system is subsequently diminished.	Simple - don't mine coal in the Galilee Basin	Vol 2, Section 5.2 E9	Comment noted.
63	Gillman	Nature Conservation	Bygana West Nature Refuge	Nature Refuges should not be mined, they are Nature Refuges.			Noted.
64	DEWS	Project description	Regulated Structures	4th paragraph - first sentence: This sentence is unclear as it could be interpreted as meaning that the sediment basin could be designed to overflow for any sized flow event "up to" the 20 year AEP rain event even a very small event say a 5 year event.	If the overflow design is for events greater that the 1 in 20 then - Reword the sentence to read: Sediment basins will be designed to overflow in events larger than the 20 year AEP rain event.	Vol 2, Section 2.12.1.3	This has been amended in the Revised Mine Project Description in Volume 4, Appendix B, Section 8.6.5
64	DEWS	Project description	Water supply	Last paragraph - first sentence: This sentence outlines "raw water supply requirements may be as low as 4 GL/annum", however, the line before Table 2-22 Raw Water Requirements on page 2-88 indicates that the maximum total raw water demand is expected to be 3.63 GL/annum.	Reword the sentence to read: Preliminary water balance results indicate that total raw water supply requirements may be less than 4 GL/annum however, further design and modelling is required to confirm this and total raw water requirements may be as high as 10 GL/annum	Vol 2, Section 2.12.3.1	Requested information is provided in SEIS Appendix K2 Water Balance Report.
64	DEWS	Project description	Water supply	Paragraph 2 is in conflict with Paragraph 4 with respect to the number of pumps and flow rate.	Insert correct figure to remove the conflict issue.	Vol 2, Section 2.12.3.3	Noted, appropriate changes are made in SEIS Appendix K2 Water Balance Report.

64	DEWS	Project description	Water supply	Although reference is made to eight farm dams being "enlarged to a capacity of about 250 ML each and used to capture flow", no reference is made to the expected yields from these storages.	Provide indication of yields from these storages.	Vol 2, Section 2.12.3.4	Use of farm dams is no longer considered
64	DEWS	Project description	Regulated Structures	All of the data for Dam 3 in Table 2-23 has its units figures missing.	Update table to provide correct data.	Vol 2, Section 2.12.4	This has been amended in the Revised Mine Project Description in Volume 4, Appendix B, Section 8.6.5
64	DEWS	Water resources	Water supply	No reference is made to the number of days of water harvesting opportunity above 430ML/day from the Belyando River, nor are the probabilities of water harvesting opportunity for a range of days provided anywhere in the EIS.	Provide a statement on the performance of the water harvesting arrangements to give an indication to the yield OR provide hydrological output data describing the number of days of water harvesting opportunity above 430ML/day from the Belyando River, and also provide a table of the probabilities of water harvesting opportunity occurring.	Vol 2, Section 6.1	As an environmental constraint the threshold for pumping water out of the Belyando was set at 430 Ml/day with pumping rates increasing with the flows in the river up until the maximum of 350 ML/day. In addition it is proposed that the first small flood of the wet season, is left for environmental purposes (up till; a specified peak flood model of 700 ML/day) For any given year the number of pumping days was 189, with the minimum number being 0 with a maximum period of 2 years. The average number of pumping days is 67, which reflects an 18% daily change that the river flow is suitable for water extraction.
64	DEWS	Water resources	Water supply	In other parts of the EIS the likely total annual raw water yield of bores along the pipeline is broadly described as 1.5 to 2.5GL with 1.5GL reportedly used in the model. In this section the "estimated" yield refers to an extraction range of 1.0L/s to 4L/s which suggests an average extraction rate of approximately 2L/s/bore (1.1 GL/a for the borefield) would more likely be found and hence appropriate to use in the model. Little direct hydrogeology, or sound indirect hydrogeology, has been done for the proposed borefield and it is often unclear in the documentation if the raw water supplies are hoped to be extracted from the Tertiary or Triassic or Permian age beds. In difference places within the EIS it is reported that each of these aquifers has poor yield or poor quality.	Describe the aquifer source/s for the borefield wells. Re-run the model with 1.1GL/a or with another revised amount following further exploration, or alternatively describe an increased size of the bore field for assessment.	Vol 2, Section 6.3.2.1	The Proponent has a much better understanding of potential groundwater inflows in the mine workings. Refer to the SEIS Updated Mine Hydrogeology Report Appendix K1. However, currently potential yields, and best location for a bore field, are not known. The Proponent is in the process of extending the groundwater model and collecting additional field data in order to get a better understanding of the potential of groundwater sources. The results to date indicate that groundwater is more available south of the Carmichael River.
64	DEWS	Project description	Relevant Legislation and Project Approvals	Errors in 1st sentence: As a large water supply dam is proposed within the ML boundary and potentially upstream of the mine worker population, a failure impact assessment will be carried out determine if the dam is referrable is also required under the Water Act and WSSR Act.	Change to read: As a large supply dam is proposed within the ML boundary and potentially upstream of the mine worker population, a failure impact assessment will be carried out to determine if the dam is referrable as required under the Water Act 2000 and WSSR Act.	Technical Report D - 3.5.1 Relevance of the Water Supply (Safety and Reliability) Act 2008	Noted.
64	DEWS	Water resources	Correct reference/ cross reference	In the last paragraph before Table D2 the Scenarios are referred to as 0, 1 and 2, yet in the subsequent two tables are referred to as 1, 2 and 3	Amend the numbers (0,1 and 2) in the paragraph to match those in the subsequent tables.	Vol 4, Appendix P2, Appendix D Table D-2	Noted, appropriate changes are made in SEIS Appendix K2 Water Balance Report.
65	Orlando	Transport	Port facilities	I can not find in the EIS reference to a likely split in the rail volumes to either port. However, the Abbot Point Cumulative Impact Assessment (2012) states that Adani propose to develop the new T0 terminal at Abbot Point, which will be capable of exporting 70 million tonnes of coal per annum above current export rates (page 1-6 of CIA). In 2012, Abbot Point Port exported 14 million tonnes of coal through the existing export terminal. In 2011 coal exports were 15 million tonnes and in 2010 coal exports were 17 million tonnes (source: North Qld Bulk Ports). The Abbot Point Coal export terminal has recently been licensed to export up to 50 million tonnes of coal per annum, but the export port and associated rail line has not exported anywhere near this volume of coal.		Vol 1, Section 8.2.8	Noted. The assessment of port and expansion of existing rail infrastructure capacity is outside scope of this EIS process. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
65	Orlando	Transport	Other rail infrastructure	The existing Newlands Rail system crosses the Bowen Development Road (main highway between Bowen and Collinsville) at a level crossing approximately 20km west of Bowen. The Bowen Development Road is a State Controlled Road that handles large volumes of traffic between the coast and the agricultural / mining areas of the western districts. The existing rail traffic (for 14 Mt of coal) already impacts the flow of traffic along the Bowen Development Road by stopping traffic for many minutes at the level crossing. The proposal by Adani to mine up to 60 million tonnes of coal and export to either Abbot Point or Hay Point will significantly increase the traffic disruptions along the Bowen Development Road at the existing level crossing. Current coal trains that use the Newlands Rail system to Abbot Point are approximately 1.5km in length and make take a few minutes to pass through the crossing.	Resultantly, Carmichael Mine should be required to make a rail underpass / overpass and remove the issues associated with increasing the rail traffic at this level crossing. This matter should not be overlooked as it has high potential to impact the people of Bowen, Collinsville, Emergency Services and also the agricultural industry through increased road delays.	Vol 3, Section 11.4	Noted. The assessment of port and expansion of existing rail infrastructure capacity is outside scope of this EIS process. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
65	Orlando	Transport	Other rail infrastructure	The Carmichael Mine project propose to use coal trains of up to 4km in length (Table 2.5 of EIS), which would add much greater traffic delays than currently experienced at the level crossing, due to the new coal trains being more than double the current coal train lengths. Furthermore, if the entire 60Mt / annum was exported to Abbot Point (worst case) then the traffic delays at the level crossing would be over 4 times greater than current levels of rail traffic (60Mt / 14Mt = 4.3). Not only will general road users be inconvenienced by over 4 times increased delays, but Emergency Services from Bowen could be hindered in responding to an emergency on the western side of the rail line by waiting for a large coal train to pass over the level crossing (e.g. in event of severe car crash or responding to an emergency on a cattle property).	(as above)	Vol 3, Section 11.4	Noted. The assessment of port and expansion of existing rail infrastructure capacity is outside scope of this EIS process. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.

65	Orlando	Transport	Other rail infrastructure	The Carmichael Mine project does not propose to upgrade the level crossing on the Bowen Development Road to reduce the risk posed at the level crossing by significant increase in rail traffic that would use the level crossing. The level crossing at the Bowen Development Road already has boom gates, however potentially increasing the coal train traffic by greater than 4 times should warrant the construction of a rail underpass / overpass. Carmichael Mine are already proposing to develop a rail underpass / overpasses for minor roads on the new section of the proposed railway (i.e. Amarroo Road, Avon Road, Gregory Development Road), but the major Bowen Development Road is not proposed to be upgraded to handle the significant increase in rail traffic proposed by the project. The minor roads proposed for rail underpass / overpass only handle up to 300 vehicles per day (page 2-11), but the Bowen Development Road handles much higher volumes of traffic.	(as above)	Vol 3, Section 11.4	Noted. The assessment of port and expansion of existing rail infrastructure capacity is outside scope of this EIS process. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
65	Orlando	Transport	Other rail infrastructure	I was just speaking with someone from the Collinsville area and they are concerned that the 2 x current level rail crossings near Collinsville (Bowen Development Road) will cause similar issues to the Bowen rail level crossing issues I mentioned in my submission dated 16 February 2013. The two other existing rail level crossings are located approximately 25km and 40km NE of Collinsville on the Bowen Development Road and could also cause traffic issues to people in the Collinsville area from the larger and more frequent coal trains (similar issues to level crossing near Bowen as detailed in my submission). So in total, there are three (3) existing seperate rail level crossings on the Bowen Development Road that would be significantly impacted if coal trains from the Carmichael Project were allowed to use the existing Newlands Rail System without installing rail overpasses/ underpasses.			Noted. The assessment of port and expansion of existing rail infrastructure capacity is outside scope of this EIS process. Any future works to accommodate a projected increased rail traffic on existing Aurizon networks, will be undertaken by Aurizon as the proponent in accordance with relevant Approval processes (State and or Commonwealth). The timeframes for these additional works and / or related approvals are the responsibility for Aurizon to provide. Adani will work with Aurizon as and when required under these processes.
66	DCCSDS	Social	Employment Strategy	Disability Services would like to encourage an employment strategy which considers employment opportunities for women and people with a disability, and information and engagement activities inclusive of people with a disability through the use of a variety of communication modes.		Vol 1, Section4 and Vol 4, App G	Will be addressed through the Workforce Management Plan, refer to SIA SEIS Volume 4 Appendix D1 Section 8.6 and SIMP SEIS Volume 4 Appendix D2 Section 3.5.
67	QTT	Transport	Road impacts	There will be significant associated infrastructure requirements for the mine, including power and water. While not specifically mentioned, this may require upgrades or greenfield roads to support this infrastructure – this should be at the proponents cost and risk. any other road (upgrades or greenfield) development will also need to be done at the proponent's cost and risk and access or alternative access arrangements will need to be in place to ensure locals can continue to use roads.		Vol 2, Section 11.3 Vol 4, App W	Adani has commenced and will continue consultation and negotiation with DTMR in regards to road impact assessment and subsequent requirements for upgrade and maintenance.
67	QTT	Transport	Road impacts	in relation to the above point, Adani has entered into agreements with the Isaac Regional Council the Elgin Moray and Moray Carmichael Roads – while a Council issue, TMR needs to be assured that this will not negatively impact traffic flows along the Flinders Highway and Gregory Developmental Roads – Adani notes that it has had discussions with TMR in this regard, but suggest that Adani needs to provide an undertaking to this effect.		Vol 2, Section 11.3 Vol 4, App W	Adani has commenced and will continue consultation and negotiation with DTMR in regards to road impact assessment and subsequent requirements for upgrade and maintenance.
67	QTT	Water resources	Flooding	there may be flood issues that arise from the proponents' proposed 'bunding' for the railway where flooding to properties may occur as a direct result of this development– this should be explored further and the State needs to ensure that it will not be liable for any compensation claims.		Vol 3, Section 6 Vol 4, App AB	Noted. Please refer to the updated Flood Report under the SEIS (Volume 4 Appendix S1). Summary of consultation with landholders regarding flooding is provided in revised SIA and SIMP in SEIS Volume 4, Appendices D1 and D2.
67	QTT	Economics	Regional Economies	while the proponents proposed use of self-contained accommodation camps and FIFO workforce will significantly reduce the likely impact on local infrastructure, it will also significantly limit the likely benefits to the local economy		Vol 1, section 6 Vol 4, App H	Comments regarding FIFO arrangements limiting the economic benefits to the local economy have been noted. The potential of the Project to produce significant positive impacts on the local economy is substantial. In order to ensure the range and extent of positive impacts can be achieved, a number of measures to mitigate possible negative impacts will be put in place. Strategies such as an increase in local participation of regional and Queensland based industry as well as encouraging the participation and up-skilling of disadvantaged groups such as Indigenous communities has been identified in the updated economic report (refer to SEIS Volume 4 Appendix E Revised Economic Assessment Report).
67	QTT	Social	Workforce management	the proponent should make stronger statements to the effect that local labour and training will be utilised/occur		Vol 1, Section4 and Vol 4, App G	Comments regarding local employment opportunities are noted and addressed in the revised SIA and SIMP (SEIS Volume 4 Appendices D1 and D2).
67	QTT	Project - Rail	Third party access	there needs to be a statement that the proponent will comply with competition laws (i.e. Australian Competition and Consumer act, and Queensland Competition act) in relation to potential future third party rail access		Vol 3, Section 2.1	Adani is subject to all application laws in relation to competition policy.
67	QTT	Stakeholder Consultation	Ongoing consultation	the EIS does not state whether or not discussions have been held with QR National and the operators of the Ports (Abbott and Hay Point) – suggest that QR National and the port operators should be part of the consultation process		Vol 1, sections 7 and 10	Comment noted the Proponent commitments have been updated to reflect ongoing consultation with stakeholders, including, but not limited to, advisory agencies. Please refer to Volume 4 Appendix D2 (Social Impact Management Plan) for ongoing consultation commitments.
67	QTT	Stakeholder Consultation	Ongoing consultation	Further to this feedback, Queensland Treasury and Trade would like to be kept informed on the progression of this important project.		Vol 1, sections 7 and 10	Comment noted. Ongoing consultation to be undertaken by Adani with Queensland Treasury and Trade.