

APPENDIX B

Consolidated Submission Issues

Table 1
Consolidated Submission Issues

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
Regulatory Agencies				
1.	Traffic and Transport	ARTC	RA1	ARTC have no further comments in relation to the Environmental Assessment (EA) for the Drayton South Coal Project.
2.	- Agriculture - Equine Health	DPI	RA2	The Office of Agricultural Sustainability & Food Security (O AS&FS) has reviewed the Environmental Assessment (EA) in relation to the Agriculture Impact Assessment (AIS) and Equine Health Impact report provided by Scott Barnett & Associates (Nov 2012) and Dr Nicholas Kannegieter (July 2012) respectively. Specific comments and consent conditions are included in Attachment 1.
3.	Soil and Land Capability	DPI	RA2	In summary: The Environmental Assessment has deficiencies including: The standard of the soil information to enable assessment;
4.	- Agriculture - Regulatory and Planning Context	DPI	RA2	Uncertainty regarding the applicability of gateway criteria;
5.	Agriculture	DPI	RA2	Information about continuing agriculture on undisturbed mine and off-set land;
6.	- Agriculture - Economics - Social	DPI	RA2	Socioeconomic assessment; and
7.	- Agriculture - Air Quality	DPI	RA2	Inconsistencies about air quality and acquisitions for nearby agricultural land.
8.	- Air Quality - Equine Health	DPI	RA2	Comments The EA report on equine health concludes - no increase in risk to foals or yearlings from either disease, noise

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	Noise			or the physical impact of dust inhalation as a result of the Project.
9.	Equine Health	DPI	RA2	Recommendations Consent conditions should reflect the recommendations of the Equine Health Impact Assessment on page 46.
10.	- Agriculture - Economics - Social	DPI	RA2	Comments The impact of permanently removing some 5,800 ha of agricultural land has been considered in the AIS and concludes that - '... the reduced availability and productivity of this land will have a minimal impact to the industry'. The conclusions are primarily based on gross production of the land rather than in relation to impacts on local agricultural sectors, supporting service industries, the local economy and local communities.
11.	- Soil and Land Capability - Ecology	DPI	RA2	Recommendations Further supplementary assessment and documentation required: Land capability and land suitability maps, along with a soil type map should be provided for the biodiversity offset area.
12.	- Agriculture - Soil and Land Capability	DPI	RA2	Comments It is necessary to build an accurate map verifying if there is Strategic Agricultural Land. The interim protocol for site verification and mapping of biophysical strategic agricultural land should be followed. Note that 1:5000 maps showing base level information, soil types and BSAL are required and GIS output files with these data should be submitted. Particular attention should be drawn to the Dermosol and Vertosol complexes which are in the landscape.
13.	Soil and Land Capability	DPI	RA2	Recommendations On disturbed lands, a soil survey scale of 1:5000 is necessary. This should apply to the 1902 ha disturbance footprint. This soil survey is unusual in that no photos of soil profiles have been provided. Soil profile and landscape photographs of representative soil profiles in each identified soil group should be provided.
14.	Soil and Land Capability	DPI	RA2	Comments There is not enough data for assessing the quality of the topsoil for rehabilitation. Some of the data presented also suggests that this soil may not be suitable to retain as topsoil. For example, Test Pit 111 shows a strongly saline, strongly sodic B2 horizon while the A horizon has not been assessed for risks. The following

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				pit (TP 116) shows a moderately saline A horizon. Similarly, the Sodosol complex shows a range of saline and sodic layers.
15.	Soil and Land Capability	DPI	RA2	Recommendations Analysis needs to be conducted down the whole profile of the test pits which are to be analysed. Enough analysis needs to be conducted to have confidence that the topsoil used is suitable for rehabilitation and will not result in saline or sodic patches.
16.	Soil and Land Capability	DPI	RA2	Comments Section 8 appendix Q states that "due to the sodic nature of many of the soils within the study area, where applicable in long term topsoil stockpiles, mulch is to be blended into the material for the purpose of enhancing the breakdown of vegetation material and minimising dust generation and soil erosion". While mulch may help (although no quantities have been stated so this is unclear), gypsum should be blended with these sodic soils specifically to combat the sodicity.
17.	Soil and Land Capability	DPI	RA2	Recommendations Section 8 needs to contain much clearer information on storage and treatment of topsoils. Specific sodic topsoils should be identified on a map and clear treatment conditions (rate of gypsum, mulch etc. to be blended with the topsoil) should be provided.
18.	- Agriculture - Ecology - Soil and Land Capability	DPI	RA2	Comments No land and soil capability assessment seems to have been conducted on the biodiversity offset area. The offset area should be mapped for land suitability and land capability and justification for taking high quality agricultural lands out of production should be made.
19.	- Ecology - Soil and Land Capability	DPI	RA2	Recommendations Land capability and land suitability maps, along with a soil type map should be provided for the biodiversity offset area.
20.	- Groundwater - Surface Water	DPI	RA2	NOW to separately advise in relation to water resources for agriculture - It seems unlikely that there would be no impacts as predicted peak inflow rates are 4.6ML/day (yr 10).

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21.	- Agriculture - Soil and Land Capability	DPI	RA2	Comments The Soil and Land Capability Report indicates that the subject land is not BSAL because the Land and Soil Capability classes were found to be IV, V, VI & VII and reliable water criterion was not met however, the latter is a misinterpretation of the criterion as the rainfall component is met which is sufficient for reliable water.
22.	- Agriculture - Regulatory and Planning Context	DPI	RA2	Recommendations DP&I will need to make the decision on whether this proposal is to be tested against the gateway criteria for BSAL, depending on whether lodgement timing is relevant.
23.	- Agriculture - Soil and Land Capability	DPI	RA2	DPI/OAS&FS are not in a position to be able to make a statement about whether it is BSAL because sub-appendix D in Appendix Q (Land Capability Mapping Rationale) is extremely hard to read and no reasonable sense can be made of it. Suggest: Instead of detailing whether each soil pit meets each of the criteria, a table listing each criterion value for each soil pit and a conclusion for each location is required. If on further examination, the site is found to be BSAL, this would affect the productive value of the land and impact on the final decision about the proposal.
24.	Agriculture	DPI	RA2	Comments The southern portion of Drayton South is included in the mapped equine CIC. However, the consultants in the AIS (p33) state that Drayton South is not well suited as a thoroughbred breeding property. The consultants state elsewhere in the AIS (page ii) that Drayton South is used for horse agistment i.e. "One licensee also operates opportune horse agistment during the thoroughbred breeding season when demand dictates".
25.	Agriculture	DPI	RA2	The AIS also provides advice (p33) on the assessment of Drayton South against the viticulture CIC criteria. Again there seems to be confusion about the criteria versus the mapped area as the report says "Validation of Drayton South, confirms that much of the mapped viticulture CIC within the Project Boundary (2,425 ha) fails to meet the criteria of the SRLUP". But when checking the maps it is clear that Drayton South disturbance boundary is partially within the mapped viticulture CIC.
26.	Agriculture	DPI	RA2	It is likely that there will be impacts particularly on Darley and Coolmore. For example, although DPI does not have a visual impact expertise, it is noted in the visual impact assessment (p63) that the consultant states that

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	Visual			"The visual sensitivity is limited lack of visibility. The exception to this is Trig Hill, which would have views to the Project. However given that this site is not used for any commercial purpose... ". It is understood by DPI that the whole property is used for commercial purpose, and the visual amenity is part of the marketing of the brand.
27.	- Agriculture - Regulatory and Planning Context	DPI	RA2	Recommendations The draft CIC verification document (which has recently been exhibited) gives guidance about identification of CIC enterprises and the need to consider a 2km radius. Darley and Coolmore are within 2 km. So the gateway criteria would apply had the DA been submitted at a later date.
28.	- Agriculture - Regulatory and Planning Context	DPI	RA2	Again, DP&I will need to make the decision on whether this proposal is to be tested against the gateway criteria (for CICs). Although the CIC gateway criteria has been included in the DGRs, the methodology for how this should be considered is not clear, given that the gateway process has not yet been established.
29.	Regulatory and Planning Context	DPI	RA2	The OAS&FS recommends that: DP&I determines if gateway criteria is applicable
30.	Visual	DPI	RA2	Visual impact mitigation forms part of the consent conditions (Note Appendix I).
31.	Agriculture	DPI	RA2	Important agricultural land uses have been identified.
32.	- Agriculture - Ecology - Mine Plan Justification	DPI	RA2	Comments Final land use for mining project area excludes agriculture. This significant change of land use across the entire project site should be explicitly justified. Documentation of final land uses for undisturbed areas within the mining lease and the biodiversity offset area should be clearer.
33.	Agriculture	DPI	RA2	Recommendations Additional documentation is required on: Areas to remain in sustainable agricultural use and intended agricultural enterprises.
34.	Agriculture	DPI	RA2	Timeline of when agricultural land will be taken out of production as the mine progresses.
35.	Agriculture	DPI	RA2	Mine closure strategies in relation to the ongoing use of undisturbed areas, particularly any Biophysical

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	Mine Closure			SAL lands within the mining lease / mine ownership.
36.	Agriculture	DPI	RA2	Consideration of alternatives to mitigate the impacts of the loss of agricultural lands (eg offsets).
37.	Agriculture	DPI	RA2	Comments Continued agricultural (grazing) use of mine owned lands are referred to but the areas available for this, their location and agricultural features are not described.
38.	Soil and Land Capability	DPI	RA2	Land capability across the entire lease area is tabulated but not mapped and the basis for determining what lands fit a particular category are not identified, this makes it difficult to assess the; - Relative differences pre and post mining and - Validity of the proposed classification and rehabilitation works
39.	- Agriculture - Soil and Land Capability	DPI	RA2	Recommendations Additional information is required about the scale and location of lands proposed to remain in agricultural use within the project area.
40.	- Agriculture - Soil and Land Capability	DPI	RA2	Comments Assessment of agricultural productivity impacts requires due consideration of: The areas to remain in agricultural production, the location of these in relation to agricultural domains, soil groups and land capability
41.	- Agriculture - Ecology - Economics - Social	DPI	RA2	The local (shire level and below) effects on the permanent removal of agricultural production some 5,800 ha (including 2,079 ha at the offset property near Murrurundi).
42.	Agriculture	DPI	RA2	The impact of mining development and the final land uses on the sustainability of continued agricultural use of residual areas does not appear to be considered.
43.	Agriculture	DPI	RA2	The EA lacks consideration of a comprehensive range of alternatives to reduce agricultural impacts and focuses on minimising impacts to adjoining equine activities.

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44.	Agriculture	DPI	RA2	Recommendations Alternatives or discussion is required regarding minimising the impact on agricultural domains A and B listed in Table 8 and Figure 65.
45.	- Agriculture - Ecology	DPI	RA2	Offsets should be considered (e.g. investment in the productive management of other farmlands) to mitigate the impacts of permanently removing some 5,800 ha of agricultural lands (within the project site and biodiversity offset property).
46.	- Agriculture - Blasting - Equine Health - Noise	DPI	RA2	Comments Potential equine and agricultural resource impacts are critically reduced via project design (reduced footprint) and by proposed Houston bund wall together with a range of other mitigatory measures. However, limited existing research restricts the capacity to accurately assess potential equine impacts particularly from noise and blasting.
47.	- Agriculture - Traffic and Transport	DPI	RA2	Proposals to retain existing road until the route is completed will minimise the risks of disruption to equine traffic and access to specialist veterinary support services.
48.	- Blasting - Equine Health - Noise	DPI	RA2	Of particular concern is that current conclusions about the capacity of horses to habituate to noise and blasting during the progression of mining operations Equine studs typically have a high turnover of short stay horses particularly during peak breeding periods. Foals are additionally at higher risk.
49.	- Air Quality - Blasting - Equine Health - Noise	DPI	RA2	Recommendations Additional information has been provided with the Equine Health Impact report which covers the issue of potential noise, blasting and dust impacts on horses.
50.	Agriculture	DPI	RA2	A map should be provided clearly showing the boundaries of the equine CIC as identified in the SRLUP.
51.	- Blasting - Equine Health	DPI	RA2	Comments The EA incorrectly assumes that;

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	Noise			- All types of horses are homogenous in their behaviour responses to noise and vibration; - The same horses are on the property continually from the start of mining operations.
52.	- Agriculture - Visual	DPI	RA2	Visual impacts are considered from various high points within the nearby horse studs, but there does not appear to have been consideration of visual impacts from the river flat areas within those studs and from Golden Hwy (within Coolmore stud) at the closest proximity to the Houston bund and mine works. An attractive rural landscape is a critical marketing advantage for the thoroughbred industry. Recommendations Ensure mitigation for visual intrusion includes views from the lower areas and from the horse establishments. There is no particular reason given why construction of Houston visual bund will not start until Year 3.
53.	- Agriculture - Visual	DPI	RA2	Comments Impacts of dust and noise on Arrowfield (Hollydeen) and its associated residences may be been under-considered due to the assumption that it was inoperative.
54.	- Agriculture - Air Quality - Noise	DPI	RA2	Information has not been fully provided on the potential impacts of the mining proposal (particularly dust, visual and traffic impacts) on grape production and wine tourism.
55.	- Agriculture - Air Quality - Tourism - Traffic and Transport - Visual	DPI	RA2	Visual impacts on the winery are discussed in Visual impact analysis (App I).
56.	- Agriculture - Visual	DPI	RA2	Recommendations Provide dust monitoring and reporting to include nearby wineries / olives / dairies / equine as proposed in Ag Impact Assessment (App Q).
57.	- Air Quality - Agriculture	DPI	RA2	Consent conditions are required to ensure that the indicative dust impacts on the residences within Arrowfield
58.	Air Quality	DPI	RA2	

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	Agriculture			(Hollydeen) vineyard are minimised and remain below legislative thresholds.
59.	Agriculture	DPI	RA2	Comments Discussion mentions other nearby agriculture.
60.	- Agriculture - Ecology - Economics	DPI	RA2	Comments The Drayton South disturbance footprint to be removed from agriculture is "approximately 1,928 ha" and the proposed biodiversity offset area is 2079ha - so 4007ha would be removed from agriculture. (Appendix R) In total, foregone net agricultural production from agricultural land resources required for the Project is estimated at \$5.6M present value (using a 7% discount rate) as stated in Appendix 6 of Appendix R.
61.	- Agriculture - Stakeholder Consultation	DPI	RA2	There is also reduction in cattle output from the Drayton South mine area (1140 head/year). There is no comment on whether the Upper Hunter Shire Council has been consulted on the impact of the loss of annual income on the viability of the Scone and Singleton saleyards.
62.	- Agriculture - Economics - Groundwater	DPI	RA2	The water costs calculated in the BCA do not appear to reflect the assumptions of \$2000 per ML and water usage stated in the report. For instance, in the BCA costs associated with groundwater are shown to be zero, yet based on 73ML/yr and \$2,000/ML, this would equate to \$1.3m in present value terms.
63.	- Agriculture - Economics - Social	DPI	RA2	Recommendations The regional impacts of the level of agricultural production foregone are only considered in terms of income foregone from the land area removed from agriculture and that this income foregone is "0.26% of the total annual agricultural production of the Hunter Region" (Note Appendix R). Section 8.8 of Appendix R states that the labour supply available for the operation of agricultural enterprises "is not expected to be impacted as a result of the Project".
64.	- Agriculture - Economics	DPI	RA2	The EA needs to: Consider regional economic impacts resulting from reduced agricultural production;
65.	- Agriculture - Economics	DPI	RA2	Include information from directly impacted value added operations e.g. loss of income for cattle saleyards; and

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66.	- Economics - Groundwater	DPI	RA2	Include complete water costing for the project.
67.	- Agriculture - Economics	DPI	RA2	Comments The EA includes detailed assessment of the costs and benefits of the project as a whole, and whether it would result in a net benefit for the NSW community in the separate Economic Impact Assessment by Gillespie Economics. This section of the EA states the project is <i>"very unlikely to have any adverse effects on equine health"</i>, but makes little other reference to the thoroughbred breeding industry. Appendix U does not adequately quantify the impacts of foregone agricultural production, but considers the reduction in agricultural land values as a proxy for this cost. Land is only one cost component of the thoroughbred breeding industry for example, and considering land values may not be a true reflection of the total adverse impacts on the industry. For instance 'clustered' industries, like horticulture, which rely on critical mass to attract both seasonal labour and specialist technical skills, and there would a marginal point where the loss of one more farm makes them all unviable.
68.	- Agriculture - Economics - Social	DPI	RA2	Recommendations The report does not adequately consider the potential impacts on the horse breeding studs whilst the visual bund is being constructed (16 months) or in the longer term, there is no statement that the final design of the visual bund is acceptable to those affected.
69.	- Agriculture - Visual	DPI	RA2	The EA should: Document support from landholders of proposed mitigation such as a statement that the final design of the visual bund is acceptable to those affected and what impacts the construction phase may have on their operations.
70.	- Agriculture - Visual	DPI	RA2	Fully quantify possible impacts of foregone agricultural production including critical agricultural industries critical mass implications.
71.	- Agriculture - Economics - Social	DPI	RA2	

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72.	- Agriculture - Air Quality - Economics	DPI	RA2	Comments Section 8.3 of Appendix R- Agricultural Impact Statement claims that "predicted dust deposition rates will have nil to minimal impact on the productivity of vegetation south of the Golden Highway, including Arrowfield Estate". However, on pages 14-15 of Appendix U-Economic Impact Assessment, there is a statement in direct contrast, namely "Arrowfield is also predicted to experience exceedance with regard to air quality and as such will likely fall within an acquisition zone for this reason. An allowance for acquisition of this property has been incorporated into the capital costs of the Project". This is a somewhat glaring contrast, with one Appendix claiming the opposite of another. This issue requires further review to determine which claim is correct, since if the winery will indeed experience air quality problems will the nearby horse studs also be affected? Recommendations The EA needs to clarify the inconsistencies for air quality and acquisitions for nearby agricultural land. Comments Appendix R states that there is an olive processing plant "within the locality of Drayton South" along with 11 dairies, and four vineyards which include three active wineries. Recommendations The EA needs to comment on whether there would be any impacts or not on "processing and value adding industries". Comments The assessment of the potential social impacts relating to the thoroughbred breeding industry is poor. There is also no comment on the social impacts of the project on the other "<i>current dominant land uses within and adjacent to Drayton South</i>", including; 4 vineyards, 11 dairies, an olive grove and cattle grazing (p2 -and 23 of Ag Impact Statement). Nor is there any comment on the potential social impacts of the eventual mine closure or comment on why these two aspects were excluded.
73.	- Agriculture - Air Quality - Economics	DPI	RA2	
74.	Agriculture	DPI	RA2	
75.	- Agriculture - Economics - Social	DPI	RA2	
76.	- Agriculture - Social	DPI	RA2	
77.	- Mine Closure - Social	DPI	RA2	

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78.	- Mine Closure - Social	DPI	RA2	The population and demographics data is from the previous population census in 2006. Evidence based decision making requires due consideration of: Potential impacts on the local community of the eventual mine closure
79.	- Agriculture - Social	DPI	RA2	The social impacts relating to the thoroughbred breeding industry (such as but not limited to competition for labour, difficulty of workers in other industries affording local accommodation)
80.	Social	DPI	RA2	Data from the 2011 Census where available. 2011 Census statistics for Muswellbrook were issued on the 21st June 2012 and are at http://www.censusdata.abs.gov.au
81.	- Agriculture - Social	DPI	RA2	It would also be preferable to note any social impacts / values specifically relating to the viticulture, dairying and cattle grazing industries.
82.	- Economics - Social	DPI	RA2	The report does not individually quantify the various social costs but merely states these costs are included as either part of "operating costs" or "capital costs". The report states that "noise costs, air quality costs, agricultural production costs and road traffic impacts will occur at a local level, but have already been incorporated into the estimation of net production benefits via acquisition costs for affected properties and mitigation costs". A similar issue prevails for costs associated with flora and fauna, and with visual impacts. There is an underlying assumption that these social costs will be completely mitigated by the proponent, and therefore there will be no loss in consumer surplus / amenity.
83.	- Agriculture - Social	DPI	RA2	Recommendations The social analysis in relation to agricultural impacts requires further work.
84.	- Agriculture - Cumulative - Social	DPI	RA2	There is a need to focus specifically on any significant cumulative impacts from mining developments in the region on agricultural communities / organisations. Other agencies to advise on social impacts generally.
85.	- Agriculture - Cumulative - Economics	DPI	RA2	Comments The cumulative economic impacts of the permanent removal of other grazing lands due to adjoining mining offsets combined with the removal of some 5,800 ha of agricultural land is not considered in relation to

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				impacts on the local economy or on agricultural industries and the support services on which they depend.
86.	Agriculture	DPI	RA2	Recommendations An assessment is required of the cumulative area of agricultural lands already approved as not being returned to agricultural use post mining in the Upper Hunter Region & Muswellbrook shire. This needs to include disturbed mining areas and biodiversity and cultural offsets.
87.	Agriculture	DPI	RA2	Comments No offsets are proposed.
88.	Agriculture	DPI	RA2	Recommendations Evidence based decision making would be better supported by specific documentation of why no agricultural offset is warranted or feasible.
89.	Agriculture	DPI	RA2	Comments Justification for this project relies heavily on there being no significant impacts on adjoining landholdings and land uses (i.e. thoroughbred studs, viticulture, dairies).
90.	- Agriculture - Air Quality - Blasting - Cumulative - Noise	DPI	RA2	Acceptable noise and blasting levels resulting from cumulative mining operations in the locality on the Darley and Coolmore stud are achieved by adopting a suite of best practice scenarios (e.g. double benching, equipment changes and dust mitigation strategies). It is not clear if there is scope for further adaptation should predicted impacts prove worse than modelled.
91.	- Equine Health - Blasting - Noise	DPI	RA2	The sensitivity and economic significance of the Upper Hunter equine industry is exacerbated by; Limited scientific studies re: equine behaviour and noise / vibration impacts
92.	Equine Health	DPI	RA2	The higher risks for foals and visiting (short stay) horses,
93.	- Air Quality - Noise	DPI	RA2	The significance and scale of the controls documented as being necessary to mitigate dust, noise and visibility to acceptable levels and possibly limited further options should modelling prove inadequate

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	Visual			
94.	- Agriculture - Blasting - Equine Health - Noise	DPI	RA2	The DGRs for this project did not require contingency plans to be specifically required in relation to agriculture because the residual agricultural impacts were identified as Moderate or Low, this appears to depend on: An invalid assumption that foals and visiting horses would habituate to blasting impacts (foals are at particular risk);
95.	Visual	DPI	RA2	Successful establishment of visual screens within 16mths; and
96.	Traffic and Transport	DPI	RA2	Capacity for continued traffic flows on Edderton Rd.
97.	- Air Quality - Noise	DPI	RA2	It's not clear if there is scope to further adapt mining industry practices should predicted air quality and noise impacts prove worse than modelled.
98.	- Agriculture - Air Quality - Blasting - Cumulative - Noise - Tourism - Traffic and Transport - Visual	DPI	RA2	Recommendations Contingency plans to mitigate for visual intrusion, dust, noise and blasting impacts on agriculture / thoroughbreds. Need to consider cumulative impacts (particularly dust, visual and traffic impacts) on grape production and wine tourism.
99.	Rehabilitation	DPI	RA2	Advice is required on effective rehabilitation of the Houston Bund (e.g. including weeding and watering new plantings).
100.	- Agriculture - Rehabilitation	DPI	RA2	Comments Not relevant unless the EA now proposes to return mined lands to agricultural uses.

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101.	- Agriculture - Stakeholder Consultation	DPI	RA2	Comments The comprehensive statement of commitments includes adoption of sustainable farming practices on residual agricultural areas within Drayton South lands and support for a working group with Coolmore and Darfey. Significant issues they should address include: - Mitigation of visual impacts, further consultation with landholders and provision of additional offsite screens if required; - Implementing leading practice dust mitigation;
102.	Visual	DPI	RA2	
103.	Air Quality	DPI	RA2	
104.	- Air Quality - Noise - Surface Water - Groundwater	DPI	RA2	Developing relevant Environmental Management plans for air quality, noise management, land management and water management;
105.	Regulatory and Planning Context	DPI	RA2	Identifying critical factors for the sustainable development of this proposal and securing a social license to operate;
106.	- Agriculture - Stakeholder Consultation	DPI	RA2	Ensuring effective consultation with local landholders and key stakeholders such as the thoroughbred breeding industry and viticultural industries throughout the life of this project and beyond.
107.	- Air Quality - Blasting - Groundwater - Noise - Surface Water - Rehabilitation	DPI	RA2	The development and the consistent implementation of appropriately detailed and relevant operational level Environmental Management Plans in consultation with key stakeholders and regulators. These should extend beyond merely meeting legal obligations. For instance weed management should include considerations to manage environmental and productive weeds such as galenia rather than being limited only to the control of declared noxious weeds. Ideally such activities would also be undertaken in cooperation with adjoining mines and agricultural landholders; and
108.	Air Quality	DPI	RA2	Effective monitoring and reporting of project outcomes together with the capacity to adjust operational practices in a timely and effective manner.

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	- Blasting - Groundwater - Noise - Surface Water			
109.	Stakeholder Consultation	DPI	RA2	Recommendations Consent conditions should include that the mine operators conduct ongoing consultation with stakeholders surrounding the site and adjoining neighbours of proposed off-set land over the life of the Project including the rehabilitation phases.
110.	- General - Mine Plan Justification	DRE	RA3	As coal is a prescribed mineral under the <i>Mining Act 1992</i>, the proponent is required to hold appropriate mining titles from DRE in order to mine this mineral. DRE requires that all mining activities are contained within mining leases held by the Proponent for this project. DRE understands that as indicated in Table 17 of the EA the Proponent will lodge a Mining Lease Application (MLA) which is wholly within EL 5460. The Proponent should be aware that the mining lease cannot be granted until planning approval has been received for the project.
111.	Rehabilitation	DRE	RA3	Under the <i>Mining Act 1992</i>, rehabilitation is regulated by conditions included in mining leases, including requirements for the submission of a Mining Operations Plan (MOP) prior to the commencement of operations, and subsequent Annual Environmental Management Reports (AEMR).
112.	Subsidence	DRE	RA3	DRE has not undertaken a subsidence assessment of the proposed highwall mining however it is noted from page 44 of the EA that: "The highwall mining design will be consistent with the guidelines outlined in the Australian Coal Association Research Program report <i>Optimal Design and Monitoring for Highwall Mining</i> (CSIRO, 2001). The design of the pillars between the entries ensures that the mining technique results in no noticeable subsidence or surface disturbance as defined by NSW Department of Mineral Resources <i>Guidelines for Applications for Subsidence Management Approvals</i>."

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				The Proponent should be aware that the granting of any mining lease will include a condition that a Subsidence Management Plan (SMP) be prepared prior to commencing any underground mining operations which will potentially lead to subsidence of the land surface.
113.	Rehabilitation	DRE	RA3	DRE supports the rehabilitation objectives prescribed in the EA. DRE has assessed the project in respect of the rehabilitation proposals detailed in the EA and determined that the report sufficiently addresses the rehabilitation requirement of the project, noting that progressive rehabilitation will be undertaken across the site throughout the life of the mine, subject to further management plans and approvals. DRE will establish and condition rehabilitation requirements through future Mining Operation Plan (MOP) and rehabilitation management plans for the site, if development approval is granted. These conditions may include appropriate rehabilitated ecosystem monitoring and use of analogue comparison sites, however these matters will be determined at the MOP and other management plan stages, if approval is granted.
114.	- Mine Closure - Rehabilitation	DRE	RA3	DRE recommends that the following conditions be incorporated into the planning approval, if granted: Rehabilitation Plan The Proponent must prepare and implement a Rehabilitation Plan to the satisfaction of the Director General of NSW Trade & Investment, Regional Infrastructure & Services. The Rehabilitation Plan must: - Be prepared in accordance with DRE guidelines and in consultation with relevant agencies and stakeholders; - Be submitted and approved by the Director General of NSW Trade & Investment, Regional Infrastructure & Services prior to the commencement of construction; - Address all aspects of rehabilitation and mine closure, including final land use assessment, rehabilitation objectives, domain objectives, completion criteria and rehabilitation monitoring.

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115.	General	DRE	RA3	Annual Environmental Management Report (AEMR) The proponent must prepare an Annual Environmental Management Report on performance of the mine against requirements of regulatory environmental approvals - planning approval, mining lease, environmental protection license. The report must be prepared according to current guidelines and presented annually to agencies.
116.	- Mine Closure - Rehabilitation	DRE	RA3	As previously discussed with NSW Department of Planning and Infrastructure, any planning approval should not include separate plans such as Mine Closure Plans, Landscape Management Plans and Rehabilitation Management Plans, but rather be replaced by a single plan called Rehabilitation Plan. The Rehabilitation Plan should address all rehabilitation aspects, including landscape, final void management and mine closure. There should be no further requirement to develop management plans if this section is addressed adequately. DRE requests that all references to Mine Closure Plans, Landscape Management Plans and Rehabilitation Management Plans referred to in the EA and previous Development Consents be replaced by the Rehabilitation Plan required by the Rehabilitation and Environmental Management Plan (REMP) process under the <i>Mining Act 1992</i>. DRE would be pleased to meet with the Proponent to assist in developing the above documents for their operation.
117.	General	EPA	RA4	The EPA has reviewed the EA, and understands that the proponent is seeking approval for the following: - Continuation of operations at the Drayton Mine as approved, with additional mining areas within the East, North and South Pits, - The development of an open cut and highwall mining Drayton South operation extracting up to 7 Mtpa of ROM coal over a period of 27 years; - Utilisation of the existing Drayton Mine workforce and equipment fleet, rejects and tailings voids and water storage; - Utilisation of the existing Drayton Mine Coal Handling and Preparation Plant; and - Construction of a transport corridor between Drayton South and Drayton mine infrastructure. The EPA provides the following comments and advice in relation to the project. Recommended conditions of

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				approval are provided at Attachment A. Environment Protection Licence (No. 1323) currently authorises operated at the Drayton Mine. The proponent will need to make application to the EPA, if consent is granted, to vary this licence to authorise both scheduled development works and the operation of the proposed Drayton South mine.
118.	Air Quality	EPA	RA4	Exceedances of EPA particulate impact assessment criteria are predicted for up to twelve private residences, with six residences to the south of the project most impacted. The EPA notes that assessment of potential air quality impacts from the project utilises percentage reductions in emission calculations based on proposed best practice control methods and as such, the predicted potential for impact relies heavily on whether emissions are as effectively controlled as assumed in the EA.
119.	Air Quality	EPA	RA4	Air quality impacts are expected to exceed the EPA's particulates impact assessment criteria¹ for up to twelve private residences as shown in Table 1 below. Note that residences are divided into private and mine owned residences with criteria exceedances shown in bold text. Potential for impacts are most significant for six private residences to the south of the project with exceedances of the EPA's 24 hour and annual average criteria and TSP criterion predicted for two residences(as shown in red)². Residences to the south east and northwest of the project where exceedances are predicted are mine owned. The EPA notes that majority of exceedances are predicted to occur from year 10 of the project onwards. ¹ EPA notes that an assessment of PM2.5 impacts was also conducted and no exceedances of the advisory standard were predicted. ² Note that an assessment of Lot 226 has also been conducted to determine if greater than 25 % of the privately owned land is predicted to exceed the 24 hour average PM10 impact assessment criterion as consistent with recent approvals processes adopted by the Department of Planning and Infrastructure for mines. 981h percentile impacts greater than 25 % are predicted for this lot during years 5 and 10 of mining activities.

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120.	Air Quality	EPA	RA4	Table 1 - Summary of key Drayton South Project Dispersion Modelling Results for Private Residences <table> <tr> <th>Receptor ID</th><th>Maximum predicted 24-hour average concentrations</th><th>Maximum predicted number of days exceeding 50 µg/m³ criteria in a year</th><th>Maximum predicted annual average concentrations</th><th>Maximum predicted TSP annual average concentrations</th></tr> <tr> <td>Units</td><td>µg/m³</td><td>Project alone</td><td>Cumulative</td><td>µg/m³</td></tr> <tr> <td>Private residences</td><td></td><td></td><td></td><td></td></tr> <tr> <td>209</td><td>24</td><td>0</td><td>10</td><td>22</td></tr> <tr> <td>217A</td><td>32</td><td>0</td><td>12</td><td>23</td></tr> <tr> <td>226A</td><td>94</td><td>13</td><td>*</td><td>88</td></tr> <tr> <td>226B</td><td>106</td><td>23</td><td>102</td><td>36</td></tr> <tr> <td>226C</td><td>100</td><td>17</td><td>*</td><td>34</td></tr> <tr> <td>226D</td><td>72</td><td>3</td><td>50</td><td>25</td></tr> <tr> <td>227A</td><td>43</td><td>0</td><td>30</td><td>19</td></tr> <tr> <td>227F</td><td>55</td><td>1</td><td>53</td><td>28</td></tr> <tr> <td>228M</td><td>54</td><td>1</td><td>**</td><td>20</td></tr> <tr> <td>240A</td><td>26</td><td>0</td><td>26</td><td>18</td></tr> <tr> <td>250A</td><td>31</td><td>0</td><td>28</td><td>18</td></tr> <tr> <td>411</td><td>31</td><td>0</td><td>11</td><td>17</td></tr> <tr> <td>Mine owned residences</td><td></td><td></td><td></td><td></td></tr> <tr> <td>57</td><td>69</td><td>5</td><td>43</td><td>25</td></tr> <tr> <td>58A</td><td>101</td><td>26</td><td>92</td><td>34</td></tr> <tr> <td>58B</td><td>84</td><td>9</td><td>***</td><td>31</td></tr> <tr> <td>60</td><td>81</td><td>19</td><td>****</td><td>54</td></tr> <tr> <td>145A</td><td>53</td><td>1</td><td>38</td><td>27</td></tr> <tr> <td>145B</td><td>71</td><td>2</td><td>*****</td><td>31</td></tr> <tr> <td>145C</td><td>56</td><td>1</td><td>*****</td><td>28</td></tr> <tr> <td>145D</td><td>52</td><td>1</td><td>*****</td><td>27</td></tr> <tr> <td>410</td><td>34</td><td>0</td><td>11</td><td>17</td></tr> </table> * Exact data not provided for particular receptor but can be assumed to follow similar pattern as for 226B as these are adjacent ** As above but grouped with 227F *** As above but grouped with 58A **** As above but grouped with 57 ***** As above but grouped with 145A	Receptor ID	Maximum predicted 24-hour average concentrations	Maximum predicted number of days exceeding 50 µg/m ³ criteria in a year	Maximum predicted annual average concentrations	Maximum predicted TSP annual average concentrations	Units	µg/m ³	Project alone	Cumulative	µg/m ³	Private residences					209	24	0	10	22	217A	32	0	12	23	226A	94	13	*	88	226B	106	23	102	36	226C	100	17	*	34	226D	72	3	50	25	227A	43	0	30	19	227F	55	1	53	28	228M	54	1	**	20	240A	26	0	26	18	250A	31	0	28	18	411	31	0	11	17	Mine owned residences					57	69	5	43	25	58A	101	26	92	34	58B	84	9	***	31	60	81	19	****	54	145A	53	1	38	27	145B	71	2	*****	31	145C	56	1	*****	28	145D	52	1	*****	27	410	34	0	11	17
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410	34	0	11	17																																																																																																																													
121.	Air Quality	EPA	RA4	The proponent proposes management of impacts at the six private residences identified in the EA via a real																																																																																																																													

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				time and/or predictive monitoring system to enable operations to be modified according to meteorological conditions and dust levels, however a detailed management plan describing how this will be achieved is not provided in the EA.
122.	Air Quality	EPA	RA4	The EPA recommends that an air quality management plan is developed that incorporates effective proactive and reactive management of activities on the mine in response to the results of measured real-time PM ₁₀ and other inputs such as predicted and prevailing meteorology.
123.	Air Quality	EPA	RA4	It is unclear whether the proponent has given a commitment to the acquisition of affected properties if necessary and the conditions of consent should include reference to acquisition where air quality is predicted to, or monitoring confirms that, the impact assessment criteria will be exceeded.
				A broad overview of proposed best practice dust control measures is provided in the EA, including Level 2 watering and use of chemical suppressants on unsealed haul roads, watering of overburden stockpiles and water injection while drilling ³ . In addition, a broad overview of a proposed real time monitoring and dust management system is provided: - Three continuous PM₁₀ monitors are proposed for the areas where worst case impacts have been predicted- south/south-west and south east of Drayton South and north-east of the existing Drayton Mine. Real time data from these monitors would form the basis of a trigger action response plan for the site. - A link with at least one of the Upper Hunter Air Quality Monitoring Network sites is also proposed (eg Jerrys Plain) - Onsite meteorological monitoring to help initiate response to adverse weather conditions and in conjunction with the PM10 monitors to identify source type and location contributing to dust emissions - A predictive meteorological forecasting system for proactive dust management by predicting where the risk of dust emissions may occur so that site activities can be managed in advance. ³ EPA also notes that the proponent has investigated the potential for reduction in emissions using a conveyor to transport ROM coal from the Drayton South mine to the Drayton CHPP rather than haulage. While the assessment indicates reduced impacts it is also noted that the greatest reductions would be achieved over existing mine owned buffer lands (Drayton and Mt Arthur) rather than privately owned residences and therefore this option is not further explored.
124.	Air Quality	EPA	RA4	
125.	Air Quality	EPA	RA4	The EPA is aware that the proposed Drayton South Coal Project is located within a region that also includes

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	Cumulative			the Drayton mine, Mt Arthur Coal mine, Mt Pleasant mine, Mangoola mine, Bengalla mine and Hunter Valley Mining operations and the EA has included background emissions from these sources when assessing cumulative impacts. As shown in Table 1 the EPA notes that exceedances of the EPA's 24 hour average impact assessment criterion are predicted for some private residences to the north east, south east and west of the proposed project when cumulative impacts are taken into account but not for the project in isolation. Although the assessment indicates that Drayton South Coal Project is not the sole contributor to exceedances at these residences, it is imperative that appropriate monitoring and dust management strategies are undertaken with view to mitigating impacts at these receivers.
126.	Surface Water	EPA	RA4	The proponent has identified that there is a high probability that saline mine water will need to be discharged from the site at various stages of mine life. The recommended conditions of approval at Attachment A specify conditions which relate to the proponents participation in the Hunter River Salinity Trading Scheme and which will be reflected in the conditions of Drayton's Environment Protection Licence.
127.	Noise	EPA	RA4	The EPA notes that in the assessment of low frequency noise, a correction factor has been applied to the source sound power levels rather than at the receiver to simplify the assessment. This is at odds with the procedure described in the Industrial Noise Policy (EPA, 2000) (INP) where the correction factor is applied at the receiver. This could result in noise levels being underestimated, depending on how the 5 dB has been applied at the source (i.e. how it has been 'spread' along the 1/3 octave band to increase the source level by + 5dB). Meteorological conditions and propagation factors could lead to a greater reduction in the applied penalty in the higher octave bands.
128.	Noise	EPA	RA4	The EPA notes that sleep disturbance is discussed in terms of maximum levels. However, the noise contours in Figure B23, B24 and B32 of the Noise Impact Assessment are presented as a combination of 'reasonable worst case' operating conditions (taken to be LAeq,night) plus 'maximum' noise levels and presented as LAeq noise contours, and not the LA 1, 1-min as per Table 11. This section also discusses source levels of plant but offers no comment on the predicted noise levels against the criteria in Table 11.
129.	Noise	EPA	RA4	Exceedances have been identified from certain activities and a recommendation is made to review potential impacts and provide mitigation, all of which are to be documented within a noise management plan. It is

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				recommended that if consent is granted a condition is included which requires the proponent to prepare a noise management plan to provide details of these mitigation actions as well as mitigation required to address potential construction noise impacts.
130.	Noise	EPA	RA4	The EPA also notes that the EA considers rail traffic-generating development and refers to the draft Rail Infrastructure Noise Guideline (Feb 2012) instead of the procedure on the EPA website. Both procedures are the same, however an assessment of the maximum (L _{Amax}) noise level is not provided. Nonetheless, the change in noise level is predicted to be below the 'project-related' increase of 0.5 dB.
131.	- Air Quality - Noise - Surface Water	EPA	RA4	The following are not included in this table: Attachment A: Recommended conditions of approval
132.	Non-Aboriginal Heritage	Heritage Council	RA5	The Heritage Branch notes that Section 8.10 and Appendix L deal with issues of non-Aboriginal heritage and it is also noted that the one Director General Requirement (DGR) for the project, in relation to non-Aboriginal heritage, is as follows: "assessment of potential impacts on non-Aboriginal heritage values of the locality related to its settlement by Europeans and its pastoral history"
133.	Non-Aboriginal Heritage	Heritage Council	RA5	It is also noted that the heritage impact assessment, undertaken by AECOM Australia, indicates that the scope of the assessment included: "Addressing the Director-General's Environmental Assessment Requirements relating to non-Aboriginal heritage, issued on 3 August 2011; - Review of previous archaeological and historical studies conducted within the study area to assess the current status of non-Aboriginal heritage and to understand the development of the area; - Locating and recording non-Aboriginal sites within the study area to assist in developing suitable heritage management recommendations and nominate areas of potential constraints; - Assess the heritage significance of sites in accordance with the Heritage Office guidelines Assessing Heritage Significance (2001); and - Presenting recommendations for the management and/or mitigation of the Project's impact on the heritage sites and archaeological resource identified" (p1).

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134.	Non-Aboriginal Heritage	Heritage Council	RA5	The Environmental Assessment states that, as part of the non-Aboriginal heritage impact assessment, historical and archival research and a field survey have been undertaken to identify all known or potential heritage items within or adjacent to the project site. These items are to be historically related to the European settlement or agricultural use of the land since the early nineteenth century.
135.	Non-Aboriginal Heritage	Heritage Council	RA5	The assessment, undertaken by AECOM Australia, identified ten known or potential heritage sites within or adjacent to the project site. Of the ten identified, two potentially locally significant items were located within the project site: - A post-and-rail fence; and - Nissan Hut with stockyard. It was noted in the assessment that these items would be directly impacted by the project and would be removed. Prior to demolition, a photographic archival recording would be made for the two items and scaled drawings of the Nissan Hut would be undertaken.
136.	Non-Aboriginal Heritage	Heritage Council	RA5	The non-Aboriginal heritage assessment also identified five heritage items already included on statutory heritage lists that are located outside but adjacent to the project site: - Plashett Homestead (Muswellbrook Local Environmental Plan 2009); - Edderton Homestead (Muswellbrook Local Environmental Plan 2009); - Arrowfield Cottage (Singleton Local Environmental Plan 1996); - Strowan Homestead (Singleton Local Environmental Plan 1996); and - Woodlands Homestead (Muswellbrook Local Environmental Plan 2009).
137.	- Blasting - Non-Aboriginal Heritage - Visual	Heritage Council	RA5	Finally, three other potential heritage items (currently not statutorily listed) were identified outside but adjacent to the project site: - Bowfield Homestead; - Randwick Homestead; and - Stockyard. According to the assessment, the items identified outside but adjacent to the project site will be indirectly

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				impacted by the project. During construction and operation, the project will visually affect the setting of the heritage items and may also affect the structural integrity of the items due to the ground vibration and pressure effects of blasting.
138.	- Blasting - Non-Aboriginal Heritage - Visual	Heritage Council	RA5	It was noted in the assessment that, prior to the project being undertaken, a non-aboriginal heritage management plan will be carried out to manage the heritage items and mitigate any adverse impacts as a result of the project. This will involve listing and mapping the identified heritage items; carrying out a significance assessment for each item; writing a Statement of Significance for each item; outlining the management and mitigation measure for visual and blasting impacts; and identifying appropriate procedures for managing any unexpected finds discovered during the project.
139.	Non-Aboriginal Heritage	Heritage Council	RA5	Having considered the Environmental Assessment and non-Aboriginal heritage assessment, the following comments are made about matters of non-Aboriginal cultural heritage: The Heritage Branch is satisfied that the thorough research already undertaken, coupled with the field survey, is a sufficient investigation of any known or potential non-Aboriginal heritage sites within or adjacent to the project site;
140.	Non-Aboriginal Heritage	Heritage Council	RA5	Although the DGR for non-Aboriginal heritage is brief in nature, it is considered that the Environmental Assessment has adequately addressed the requirement;
141.	Non-Aboriginal Heritage	Heritage Council	RA5	It is recommended that, prior to the project being undertaken, the non-Aboriginal heritage management plan be developed in consultation with Muswellbrook Shire Council and Singleton Council in order to manage the heritage items of local significance appropriately;
142.	Non-Aboriginal Heritage	Heritage Council	RA5	It is recommended that consultation be undertaken with Muswellbrook Shire Council and Singleton Council about the inclusion of the identified (but currently unlisted) heritage items on local environmental plans. In particular, discussion should be had regarding the fence and Nissan Hut and Stockyard prior to demolition;
143.	Non-Aboriginal Heritage	Heritage Council	RA5	Should any of the items be found to be of State Significance it is recommended that further consultation be undertaken with the NSW Heritage Council on the management of any impacts to those items prior to consent being issued;

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144.	Non-Aboriginal Heritage	Heritage Council	RA5	Should the demolition of the fence and Nissan Hut and Stockyard proceed and a photographic archival recording undertaken, it is recommended that this be prepared in accordance with the Heritage Council's publications <i>'How to Prepare Archival Records of Heritage Items'</i> (1998) and <i>'Photographic Recording Of Heritage Items Using Film or Digital Capture'</i> (2006). Copies of the recordings should be lodged with the Heritage Branch, Muswellbrook Shire Council and Singleton Council;
145.	Non-Aboriginal Heritage	Heritage Council	RA5	As part of the non-Aboriginal heritage management plan, it is recommended that the significance assessments and Statements of Significance for each item be undertaken by suitably qualified and experienced heritage consultants;
146.	Non-Aboriginal Heritage	Heritage Council	RA5	During the project operation, it is recommended that ongoing assessment and monitoring of the structural integrity of the identified heritage items should be undertaken;
147.	- Non-Aboriginal Heritage - Visual	Heritage Council	RA5	As recommended in the non-Aboriginal heritage assessment, additional tree screening and plantings should be used to mitigate the adverse visual impact of the project on the heritage items adjacent to the project site; and
148.	Non-Aboriginal Heritage	Heritage Council	RA5	The non-Aboriginal heritage assessment makes no reference to potential archaeological sites within the project area. The non-Aboriginal heritage management plan should outline the methodology for how archaeological sites will be managed if discovered during the project construction and operation.
149.	Non-Aboriginal Heritage	Heritage Council	RA5	Please be advised that these are preliminary comments only and a full merit assessment of this project has not yet been undertaken.
150.	General	MSC	RA6	By Application dated 4 March 2011 (the Application), Anglo American Metallurgical Coal Pty Limited (the Proponent) seeks, pursuant to the, now repealed s75J of the Environmental Planning and Assessment Act 1979 (the Act), to develop a new coal mine (the Project). It is common ground that the Proponent is entitled to make the Application pursuant to that provision because of the effect of transition arrangements set out in Schedule 6A of the Act.
151.	Traffic and Transport	MSC	RA6	Council does not support the Application and notes that: The Project, taken individually and in aggregation with other proposals for road closures and road

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				realignments will have a substantial impact on traffic efficiency in the local government area. Although the project will bring forward road safety improvements on Edderton Road, the short-term improvements to traffic safety do not ameliorate the permanent loss of traffic efficiency;
152.	Social	MSC	RA6	The Application is founded on a false assumption insofar as the Project's impact on Muswellbrook Water is concerned. Council notes that it will not have sufficient waste water treatment capacity to support the Project until 2022;
153.	Social	MSC	RA6	The Application is founded on a false assumption insofar as the Project's impact on community health and childcare services is concerned. The Project would have a deleterious impact on public health services and childcare services and should be refused;
154.	- Agriculture - Economics - Tourism	MSC	RA6	The Application is founded on false assumptions insofar as the Project's impact on the local economy is concerned. Council submits that the demand created by Project for goods and services in circumstances of constrained local supply would merely result in inflationary pressures in various discrete markets rather than return any local economic benefit. The Project would have a substantially deleterious impact on the sustainability and growth of the thoroughbred industry and other industries including the agriculture and tourism industries. The Project would expose the local economy to substantial vulnerability in the event of a further weakening of the international price of thermal or soft coking coal, an increase in the value of the Australian dollar, or a further increase in the cost of coal production.
155.	Ecology	MSC	RA6	The Project would have a substantial and unmitigated impact on the preservation of local biodiversity, Regional woodland connectivity, remnant vegetation preservation and water quality downstream of the Project.
156.	- Rehabilitation - Final Landform	MSC	RA6	The Project falls well short of 'best practice' insofar as final landform and rehabilitation is concerned. The Project would result in three final landform voids.
157.	Air Quality	MSC	RA6	The Project would contribute to particulate matter in the Upper Hunter air shed in circumstances where the air shed is at capacity insofar as the National guideline is concerned. The Project makes no sufficient attempt to manage dust with best practice techniques. For all the above reasons, Council submits that the Application should be refused.

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
158.	Traffic and Transport	MSC	RA6	In 1997, Council adopted a mining-related road strategy for the Shire known as the Western Roads Strategy. The document was developed in response to increasing requests from the coal industry for substantial road closures and realignments. The document was developed to strategically coordinate the orderly reconfiguration of the Shire's rural road network to meet the traffic efficiency and safety needs of all road users including the coal industry – which was located then, as now, substantially west of the New England Highway. The document was funded by those industry participants seeking network closures or realignments at the time.
159.	Traffic and Transport	MSC	RA6	It is important to note that each of the coal mining developments in the Shire is accessed by a local road. These roads include: Thomas Mitchell Drive, Bengalla Link Road, Wybong Road, Coal Road, and Muscle Creek Road. Some of these roads were purpose built¹ and others evolved from former rural roads². ¹ Bengalla Link Road and parts of Thomas Mitchell Drive, Coal Road (and Muswellbrook Coal Road). ² Wybong Road, Thomas Mitchell Drive, Muscle Creek Road.
160.	Traffic and Transport	MSC	RA6	In addition, there is increasing coal related traffic on local roads not used for primary access to coal mines. Edderton Road, which links coal mining developments in the Shire with the Golden Highway and the Mount Thorley Industrial Estate, is one such road. The Bell and Market street over-dimensional vehicle bypass of the National highway is another.
161.	Traffic and Transport	MSC	RA6	Council has qualified an independent traffic expert to assess the impact of the project on local roads and particularly: - Thomas Mitchell Drive; - Edderton Road; and - The overall network efficiency and safety. At the time of making this submission, the independent traffic expert's report was not available.
162.	Traffic and Transport	MSC	RA6	It is noted, however, that: The assertion that the realignment of Edderton Road will "complement the already approved realignment of the northern section of Edderton Road" is not thought to be true. The proposed northern realignment is likely to be counter-productive in terms of traffic efficiency directing traffic away from the desired north

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
				eastern travel alignment to Muswellbrook. The Proponent's proposed realignment further exacerbates this traffic inefficiency. The present and proposed alignments are depicted in the diagram below. While it is acknowledged that the Project will bring forward traffic safety improvements, the Project will result in a permanent loss of traffic efficiency.
163.	Traffic and Transport	MSC	RA6	The Proponent asserts that "with improved road geometry and sealed width, it is likely to better operate at the default 100 km/h speed limit. Therefore, there should be minimal impacts (and possibly even an improvement) to the travel time due to the realignment itself". That assertion is not thought to be true. Additionally, the statement is founded upon two false assumptions. Firstly, it is noted that the project only brings forward road safety upgrades by approximately five years. The proper assessment, therefore, should be made against the longer term upgrades on the existing alignment as against the shorter term upgrades on the realignment. Secondly, the Proponent's assertion that the HVEC proposal is also unlikely to affect travel times is false and acknowledged by HVEC in its assessment.
164.	Traffic and Transport	MSC	RA6	The Proponent asserts that the movement of the Edderton Road/Golden Highway intersection 5kms to the north-west will result in 3 – 4 minutes of extra travel time for traffic heading north-west to the intersection and, conversely, that traffic heading south-east to the intersection will have 3 – 4 minutes of less travel time. The inference is that there is a balancing in the overall impact. It is noted, however, that the vast majority of traffic enters the intersection from the north-west. Secondly, the real traffic delay is also affected by the counter-productive proposed realignment of the road itself and not just by the placement of the intersection. It is not true, therefore, to assert that north-western traffic will have their travel times increased by 5kms or 3 – 4 minutes. The real impact is much greater.
165.	Traffic and Transport	MSC	RA6	With respect to Thomas Mitchell Drive, the proponent essentially asserts that HVEC is undertaking upgrade works and that those works are sufficient. All parties (the Department of Planning, the RMS, Council and HVEC) noted that Thomas Mitchell Drive in its then present condition was unsatisfactory to meet the safety and traffic efficiency requirements of the HVEC and associated developments including the Drayton coal mine. Accordingly, it was a condition of the HVEC approval that it upgrades three Thomas Mitchell Drive intersections and provides \$7.06m to upgrade Thomas Mitchell Drive. The figure of \$7.06m was arrived at from a conceptual costing done as a desktop exercise by the RMS during the

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				HVEC approval process for the Mt Arthur coal mine and was a representative estimate for the cost of the full upgrades required. A detailed costing of those necessary upgrades now discloses that the works will cost \$17m. Council has since funded a further \$4m of upgrade works but there remains a \$5.96m shortfall. The Proponent's assertion is therefore false on at least two counts, firstly it assumes that HVEC was required to undertake the work in all events but a careful reading of the approval discloses that while this is true of the intersections, it is not true of the road itself and that HVEC is only required to complete the first \$7.06m of the works all agree is necessary to adequately protect the travelling public from the effect of the developments concerned. Secondly, it assumes that HVEC will fully develop its project. While that course is likely, it is noted that the obtaining of a development approval does not require an obligation to proceed to development and an underwriting condition on the Proponent to complete all the necessary works is required.
166.	Traffic and Transport	MSC	RA6	While the Application refers to the "realignment" of Edderton Road, the Proponent does not, in fact, propose a realignment at all (a process which realigns the road with its road reserve) but rather a road closure and the gazettal of a new road. The distinction is important because while an application under section 138 of the Roads Act 1993 (the Roads Act) must be applied consistently with any s75J approval pursuant to planning law, an Application under Part 4 of the Roads Act, for a road closure, does not. It is the subject of a separate consultative and statutory process. The Minister or the Planning Assessment Commission does not have power to prejudice an Application the Parliament intended as the subject of a separate administrative process.
167.	Traffic and Transport	MSC	RA6	The Proponent has been repeatedly invited to submit a concurrent proposal for its road closure with its planning proposal. The earliest of those invitations was made in 2009. Despite repeated invitations to do so, the Proponent has elected to proceed solely with its planning proposal.
168.	Traffic and Transport	MSC	RA6	Council notes that it will be the consent authority for any road closure and accordingly, does not propose to comment on the merit or otherwise of the proposal to close a section of Edderton Road. Council notes, however, that any approval by the Minister or the Planning Assessment Commission must: Have a pre-condition that the Road Act application for road closure be approved in substantially the same terms as any planning approval; and

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				Must not seek to prejudice that separate statutory exercise.
169.	- Cumulative - Traffic and Transport	MSC	RA6	Council notes that it has indicated to the Proponent that Council is unlikely to consider a Road Act application for the closure of a road until a mine affected road network study for the Shire is completed so that the cumulative effect of mine related closures can be understood. Council notes that the Department of Planning and HVEC have made \$50,000 contributions so that this exercise can commence. The exercise is unlikely to be concluded before September 2013 and remains only partly funded. The Proponent has made no contribution to the exercise despite being aware of the importance of doing so.
170.	Social	MSC	RA6	Council is the owner and operator of water and waste water treatment services in the Muswellbrook local government area. The provision of water and waste water treatment is the provision of critical infrastructure.
171.	Social	MSC	RA6	Much of the proponent's environmental assessment is founded upon an assumption that as the Project seeks to largely continue the employment of its existing workforce (with a significant but insubstantial increase in that workforce) that its impact on the necessary provision of services by third parties, including Council, is negligible. That key assumption, which underpins its environmental assessment, is false.
172.	- Cumulative - Social	MSC	RA6	In its planning, Council takes into account the cumulative workforces of multiple developments deemed significant including six coal mines. In assessing its support or otherwise for coal mining development, Council takes into account its capacity to meet the demand of that development on Council services. Council, in assessing that it had appropriate capacity for new and expanding mine development, was entitled to take into account the end of life of existing mines including Drayton and the organic transfer of a cumulative skilled workforce to those new and developing coal mines. That is particularly so where the open-cut coal workforce skills were readily transferrable. It would be improper and, in the alternative, unreasonable, for Council to have assumed in its planning that the Drayton South coal mine would be approved and the workforce transfer from Drayton to Drayton South because: - The Proponent had no development consent to do so; - The Drayton approval ended in 2017; - The Drayton coal resource was economically exhausted in 2017; - The Drayton South coal project was known to be controversial;

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				- The Proponent had publically stated in the National media that the project was marginal from a financial point of view and would be jeopardised by the introduction of certain Federal Government taxes; and - It would have been to 'gold plate' the provision of public infrastructure for Council to plan to meet uncertain future demand.
173.	- Economics - Social	MSC	RA6	The truth of the matter is that Drayton South is a new mine on a new lease and although it proposes to transfer its workforce, from a planning point of view there is no proper distinction or legal reason why that workforce need be transferred to that as against any other new or expanding open-cut coal mine. The assumption is an affectation to hide its real and demonstrable social, economic, and infrastructure impacts. The Proponent itself, in its Application discloses to 'create' 450 operational jobs. The Proponent assumes for its economic benefit modelling the creation of new jobs but for its social and infrastructure impact cost modelling assumes the creation of a negligible few.
174.	Social	MSC	RA6	Muswellbrook Sewage Treatment Plant (the STP) was originally constructed in 1935 and has been augmented several times in response to population growth and tightening water quality requirements. The treatment plant uses a trickling filter process with maturation ponds for the treatment of sewage and cold anaerobic digestion for the stabilisation of residual sludge. The STP operates with aging infrastructure that is at or fast approaching its treatment capacity limits. The biological trickling filter process was installed in 1937 and 1963 and the condition of major structures ranges from poor to satisfactory. As a result of population growth, the treatment plant currently operates at or above its intended treatment capacity. In 2012, Hunter Water conducted an assessment of the STP which noted: - The imhoff tank is overloaded; - The trickling filters are operating at their hydraulic limits; and - The sewage flows to the treatment plant routinely exceed the hydraulic capacity of the channels and pipework that connects the major treatment tanks, resulting in internal overflow events and unintended bypassing of treatment units. Council notes that the STP was offline from inflow overload and the consequential destruction of the STP's biological process for a week in 2011.

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175.	Social	MSC	RA6	Council's Sewage Servicing Strategy plans the replacement of the STP in 2022 at which time its capacity will increase from 12,500 EP to 21,000 EP. Council's estimate of the cost of the new STP, fortified by a review conducted by the NSW Office of Public Works, is \$34m.
176.	Social	MSC	RA6	In giving its support to the Mt Arthur coal expansion project and the Mt Pleasant project, Council assumed the end of the Drayton project. Council also assumed the recommissioning of a decommissioned part of the STP to provide an additional 500 EP.
177.	Social	MSC	RA6	Council has explored all options for the interim augmentation of the STP and has made multiple applications to the State Government for funding assistance to bring the replacement of the STP forward to meet the needs of the Drayton South project but, to date, has been unsuccessful in those endeavours.
178.	- Cumulative - Social	MSC	RA6	Council estimates that the project will create cumulative coal industry induced demand of 388.8 EP calculated on the basis of 450 (created jobs) x 0.6 (Muswellbrook based proportion) x 0.8 (jobs to household conversion rate) x 1.8 (household to EP conversion rate).
179.	Social	MSC	RA6	The Proponent makes no offer to bring the construction of the STP forward to meet the demand and Council has no capacity to meet it otherwise. The cost to bring the project forward is \$9.6m. It is noted that even if the Proponent made an offer sufficient to enable the project to be brought forward, it is unlikely the project would be constructed by the time it is required.
180.	Social	MSC	RA6	In short, it was reasonable for Council in its planning to assume the transfer of the Drayton workforce to other new or expanding mines in its forward calculations for servicing capacity. The Council has no ability to meet the sewage treatment demand induced by the Drayton South project. Council notes that it will have capacity to meet the needs of the Drayton South project from 2022 and invites the Proponent to resubmit its Application at that time.
181.	Social	MSC	RA6	Council notes that it has qualified the NSW Office of Public Works to provide an independent comment on the matters set out by Council above.
182.	Social	MSC	RA6	Council repeats the submission at paragraphs 13 and 14 in respect of the assumption concerning the continuation of the Proponent's workforce from its Drayton operation in support of the Council's submission in this part.

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183.	- Cumulative - Social	MSC	RA6	In HVEC's application for expansion of the Mt Arthur coal mine, it noted³ that: The potential cumulative impacts on the local region are likely to include: [(a)] likely significant strains on health services, in particular hospitals; [(b)] contribution to strains on the existing childcare services; and [(c)] potential pressures on existing primary education services. ³ See p. 12.55 of the EA for the proposed modification.
184.	- Human Health - Social	MSC	RA6	HVEC was right to make those concessions concerning health services. In the intervening period, the Hunter New England Area Health Service (HNEAHS) has confirmed that poor population health presentation statistics at Muswellbrook Hospital are partly because of grossly inadequate health service availability in the Muswellbrook area. Those poor population health statistics include: - In "the period 2007 to 2009, 0-35 year-old people resident in the Muswellbrook postcode had higher rates of emergency department presentations for both asthma and overall respiratory illness than the remainder of the HNEAHS and Sydney⁴; "For rates of asthma presentations, residents in the Muswellbrook postcode ranked highest among people aged less than 35 years of age"⁵; "Muswellbrook area has high rates for emergency department presentation for asthma"⁶; "Singleton and Muswellbrook local government areas have higher rates of cardiovascular disease hospital separations than all of the Hunter New England Area Health Services (HNEAHS) or NSW"⁷. Additionally, Muswellbrook has the highest preventable mortality rate in the Hunter and the emergency department at the hospital has been described by HNEAHS as "grossly undersized". It is understood the floor area of the emergency department, for example, is 1/20th of the appropriate clinical standard. ⁴ See p. 11, <i>Respiratory and cardiovascular diseases and cancer among residents in the Hunter New England Area Health Service</i>, NSW Health. ⁵ <i>Op Cit</i>, p.12. ⁶ <i>Op Cit</i>, p.11. ⁷ <i>Op Cit</i>, p.19.
185.	Social	MSC	RA6	At the time of the Mt Arthur approval, the Department of Planning accepted the impact but noted that royalty

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				payments would be made to the State Government which was responsible for improving health services and health infrastructure in Muswellbrook and it was satisfied funds would flow as they were required. With respect, that finding was a convenient falsehood. The Department of Planning either knew or ought to have known that at the time the Department of Health had nothing in its budget, neither in its forward estimates, nor in its ten year planning to do anything to improve either health services or health infrastructure at Muswellbrook in any significant way.
186.	Social	MSC	RA6	Council submits that the health services strain will, in addition, be on general medical practitioner services, midwifery and other allied health services including ambulance services.
187.	Human Health	MSC	RA6	Council submits that the Project will have a deleterious effect on human health and should be refused. Council submits that assessed impacts on human health should not be “bundled up” with other considerations in a balancing exercise undertaken to assess public interest.
188.	Social	MSC	RA6	Council submits that HVEC’s was also right to make concessions with respect to its assessed impact on childcare and early and primary education services. Council notes that it holds an independent Shire-wide childcare services study which confirms that assessment. Council subsidises childcare services, particularly costly out-of-hours day care services, in the Shire and the Project will place an unacceptable burden on Council and its community.
				Council submits that the Proponent’s offer to mitigate health and educational impacts by way of making community contributions to lifestyle matters by a proposed voluntary planning agreement with Council is: - improper; - contrary to a proper construction of planning principles; and - contrary to Government policy and to the public interest in relation to health and education (particularly in relation to the ensuring of human health); Council submits that the Proponent’s attempt to mitigate health and educational impacts in the manner sought by the Proponent is a relevant matter for the purpose of the assessment.
189.	- Human Health - Social	MSC	RA6	
190.	- Cumulative - Social	MSC	RA6	Although no cumulative assessment of the impact of mining on the labour force has been undertaken, there is anecdotal evidence that the endogenous labour pool has not been able to satisfactorily meet the needs of

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				intensive mining in the sub-region ⁸ . Limited labour supply and high demand for labour has increased the price of labour which, in turn, appears to have flowed into prices more generally. ⁸ 2008 ACARP Report: Assessing the Cumulative Impacts of Mining on Regional Communities: An Exploratory Study of Coal Mining in the Muswellbrook Area of NSW (the Centre for Social Responsibility in Mining, the Centre for Water in the Minerals Industry and the University of Queensland) February 2008.
191.	Social	MSC	RA6	Council submits that the labour market is probably over heated in the sub region – something which is every bit as burdensome as a labour market which suffers a lack of demand. Labour is an important input in production. A high labour price contributes to higher prices more generally. This is problematic in a community with a 50% higher proportion of people on fixed incomes – many of whom rent from the Department of Housing. The unemployment rate in the Upper Hunter (which for statistical reasons includes Gloucester, Dungog, and Upper Hunter LGAs – all of which have comparatively little mining) is 2.5 percentage points lower than the State unemployment average. The real figure for Muswellbrook and Singleton is probably much lower – and lower again when the skew for the disproportionate number of persons presenting with barriers to entry (largely from areas of social disadvantage) is taken into account.
192.	Social	MSC	RA6	The price of labour has been constrained in real terms – unable to outstrip the local cost index. That may be one contributing factor in why Muswellbrook's position on the relative wealth index has dropped relative to local government areas without significant mining over the last fifteen years.
193.	Social	MSC	RA6	There are other consequences that flow in an economy denuded of sufficient labour. The depletion of trade qualified persons providing domestic trade services is one such consequence.
194.	- Groundwater - Surface Water	MSC	RA6	Relative inelasticity of supply is true of a number of other local markets as well. The supply of irrigable water from the Hunter is perfectly inelastic – a result of the deregulation of water licences and the full allocation of the Hunter supply.
195.	Social	MSC	RA6	Except for some minor incremental (marginal) further land use, the supply of land is also perfectly inelastic and the market for accommodation is relatively inelastic – constrained by the availability of land for urban release, the SEPP (infrastructure) and its effect on residential development on the rail corridors, and construction timetabling. House prices and the cost of living in Muswellbrook, Denman, Aberdeen and Scone have risen markedly in the last few years and the supply of rented properties approximates mere turnover.

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196.	- Economics - Social	MSC	RA6	Any pressure on demand against such relatively inelastic supply has affected price shocks. The price shocks created by those demand spikes have been pronounced and have given rise to sharp increases in the cost of living. The ability of the sub-region's economy to absorb its 30 state significant developments at equilibrium, insofar as individual local markets are concerned, is very limited indeed and, as noted, the face value of labour has increased at a rate less than the increase in the cost of living – wages growth therefore declining in real terms.
197.	Economics	MSC	RA6	The economic assessment undertaken by the Proponent contains a number of false assumptions: - That supply in various discrete markets will react perfectly elastically to the demand created by the project; - That the project will necessarily proceed for the full proposed period; and - It incorporates the conclusions of the proponent's traffic and social reports which rely on the assumption discussed in paragraphs 13 and 14.
198.	- Agriculture - Economics	MSC	RA6	The analysis does not consider a number of matters which the Proponent was required to consider, including: - The opportunity cost of sterilising the growth, or directly impacting upon the thoroughbred industry; and - The effect of the project on the local economy.
199.	Economics	MSC	RA6	Council has qualified an expert to comment in relation to the above. At the time of making this submission, that report was not available.
200.	Economics	MSC	RA6	Council asserts that the demand created by the project will cause overhear in a number of discrete local markets pushing up inflation above rises in the face value of labour and a consequential deterioration in the purchasing power of wages in the present economy.
201.	Economics	MSC	RA6	Price shocks have impacted upon other industries which compete for land, water and labour. Quite apart from the uncertainty created by buffer, offset, and attenuation acquisition attaching to mining consents, price shocks have undermined the certainty necessary for capital investment in industries which compete in affected markets.
202.	Agriculture	MSC	RA6	Muswellbrook Shire is home to the largest supply of thoroughbred horses for sale to the international market

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				of any local government area in Australia.
203.	- Agriculture - Mine Plan Justification - Regulatory and Planning Context	MSC	RA6	In what might be described as the closest thing to judicial comment on the looming conflict between the thoroughbred and mining land uses, the commissioners in the Bickham decision found that "the available evidence supports the view that open-cut coal mining and a viable international-scale thoroughbred breeding enterprise are incompatible land uses"⁹. ⁹ Planning Assessment Commission (3 May 2010) The Bickham Project Report, at p. vi.
204.	- Agriculture - Economics - Social - Tourism	MSC	RA6	The viticulture industry is also under substantial pressure (principally from oversupply). The viticulture industry has 'sandbagged' its decline by pegging itself to the tourism market. That tourism market relies on critical mass. The expansion of the mining industry has claimed a number of wineries which have significantly reduced that critical mass. Further, the demand created by the mining industry for accommodation has squeezed out the demand created by tourism for accommodation and impacted heavily upon the tourism industry.
205.	- Economics - Mine Plan Justification - Regulatory and Planning Context - Social	MSC	RA6	The urban land use conflict with coal mining also needs further examination. As noted earlier, Muswellbrook's residential growth is substantially constrained by coal mining development and associated rail infrastructure. Acquisition has also constrained the prospect for the further release of industrially zoned land.
206.	Economics	MSC	RA6	Council submits that the project will have a deleterious impact on economic diversity and expose the local economy to substantial vulnerability in the event of a further weakening of the international price of thermal or soft coking coal, an increase in the value of the Australian dollar, or a further increase in the cost of coal production.
207.	Ecology	MSC	RA6	The Proponent applies to engage in further significant land disturbance. An offset strategy is proposed by way of mitigation.
208.	Ecology	MSC	RA6	The following is noted:

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				- The mine is positioned in a critical part of the Shire's environmental (woodland connectivity, remnant woodland, and remnant valley floor habitat) corridor. Particularly, the mine will disturb land of substantial ecological value and some of the most intact local habitats outside of the Shire's national parks and state reserves; - A substantial part of the proposed disturbance contains remnant or regenerating woodland or grassland communities which are listed under State and Federal Legislation as Ecological Communities under various levels of threat such as Critically Endangered and Endangered Ecological Communities. The Project Area is also a foraging location for Swift Parrot (Endangered/ EPBC Act) with recorded sightings during the 2011 surveys conducted for the Project.
209.	Ecology	MSC	RA6	The offset strategy principally proposes offsite offsetting. Council submits that this strategy does not cure the impact of the proposed disturbance in circumstances of such large cumulative historical disturbance in the local government area.
210.	Ecology	MSC	RA6	It is further noted that there is little land left in the Shire for offset and mining proponents have increasingly sought to acquire land in neighbouring LGAs to satisfy offset requirements. Against that background, there is the very real potential for the extinction of local ecological species. This is particularly true of Muswellbrook's native orchids which are apparent for only short periods each year. The proper and sufficient management of offset plans to preserve habitats and species is increasingly problematic when half the rateable area of the Shire is subject to potential disturbance.
211.	Ecology	MSC	RA6	Council submits that, for the above reason, the Project will have an incurable and unmitigated detrimental impact on local biodiversity and ecology and the Application should be refused.
212.	Ecology	MSC	RA6	Further, and in the alternative, Council does not support the offset strategy in the absence of evidence of the final landscape management plan (and the rehabilitation and offset management plan) and its integration with the offset strategy proposed by the Application. Particularly, Council notes that the utility of the offset management plan will ultimately depend in no small measure on the success of the final landscape management plan. The final landscape plan should include routes for internal access to significant ecological colonies to ensure the perpetual preservation and endogenous recolonisation (sustainability) of the offset
213.	Ecology	MSC	RA6	

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				enhancement areas and the undisturbed habitats.
214.	Final Landform	MSC	RA6	The Project includes a conceptual final landform that includes expansive planar slopes and a distinct lack of micro relief and natural appearance. This is particularly evident on slopes facing south east and clearly visible from the New England Highway. The landscape plan falls well short of best practice being deployed at neighbouring mines.
215.	- Final Landform - Visual	MSC	RA6	The 2007 Environmental Assessment Drayton Mine extension (2007 EA), includes a photo montage (figure 30C pp. 97 and 98) that understates the visual impacts of the spoil emplacement. The landform currently visible is significant in the landscape and should be shaped to produce a natural landform and contain appropriate topographical features in keeping with the surrounding undisturbed landscape.
216.	Final Landform	MSC	RA6	Council's mining rehabilitation policy encourages research into best practice rehabilitation techniques particularly in this field of emplacement geomorphology to attain stable and natural looking landforms. While Council cannot, at this time, provide any guidance on how a more natural looking landscape can be achieved, it is critical that this type of information be developed quickly so that mining rehabilitation strategies and management plans may be better informed and developed.
217.	Final Landform	MSC	RA6	The proposed final landform in this modification includes three voids. The proposal is not consistent with Council's policy on final voids. The proposed project falls well short of best practice aimed to reduce the number and depth of residual landform voids. The Project makes no sensible attempt to achieve best practice in that regard.
218.	Final Landform	MSC	RA6	The Northern Void is proposed to be filled to a level of RL 178. This is compared to the 2007 EA (final landform Figure 24 p. 80) where that area is shown as a flat area at RL 220m and is free draining. The modified landform appears to be internally drained; however, no indication of the hydrology or water storage capacity is provided.
219.	Final Landform	MSC	RA6	The southern void is proposed as a water body. It is noted that the high wall remains as a steep face. Final use of the void appears to rely on the Drayton South Project utilising these voids.
220.	Final Landform	MSC	RA6	The modification for the eastern voids proposes a combination of filling with tailings and possibly ash from Liddell Power Station. The final surface level is proposed at RL150. This will be adjacent to the western ash

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				dam wall at RL 201. The 50m height difference will be within 100m laterally resulting in an effective 2:1 grade far beyond the expectations on mine rehabilitation nominally no greater than 18 degrees.
221.	Final Landform	MSC	RA6	Council submits that the proposed final landform voids represent a substantial and permanent environmental detriment and that the Project makes no sensible attempt to minimise its use of voids and that it is legitimate to refuse development consent, in conjunction with other principles of public interest, for that reason.
222.	- Final Landform - Rehabilitation	MSC	RA6	The conceptual final land form in the modification EA does not provide any information regarding vegetation rehabilitation. The 2007 EA includes the provision of vegetation corridors in keeping with the "Synoptic Plan". Council's mining rehabilitation policy seeks the commitment of 70% of the disturbed area to be rehabilitated to "high density tree planting" which is defined in the order of greater than 30 trees per hectare.
223.	- Final Landform - Rehabilitation	MSC	RA6	Council submits that the landscape rehabilitation should be determined from the integration of potential land uses considering the proximity to road access, utilities, water supply, surrounding land uses, slope, aspect, outlook or visibility and elevation. The analysis of these factors should result in a series of sub-domains that meet the strategic objectives set out in Council's Land Use Development Strategy.
224.	- Final Landform - Rehabilitation	MSC	RA6	It is proposed that if the Project proceeds, that following the completion of rehabilitation, when the completion criteria is met, that the land be rezoned to appropriate land use zones in the Muswellbrook Local Environment Plan.
225.	- Final Landform - Rehabilitation	MSC	RA6	Any land that may be proposed for RU1 should be characterised by: - Having access to roads, water and utilities and the final land form must be of a suitable geomorphology to allow for functional association with adjacent high quality agricultural land. - Infrastructure or utilities necessary to give effect to the land-uses contemplated by the plan. - All land rehabilitation plantings should provide for biodiversity connectivity, i.e. no more than 3km spacing between minimum patches sizes of 10 hectares and interstitial tree plantings at 60-80m spacing (3-4 trees per hectare).
226.	- Agriculture - Final Landform	MSC	RA6	Council notes that the land has been classified as strategic agricultural land and further notes that the Project makes no attempt to consider a landform and revegetation plan which considers longer term use for that purpose. Council submits that the final landform and rehabilitation was arrived at solely to minimise the cost of

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	- Mine Closure - Rehabilitation			mining. That to have proceeded in that way is not best practice, is contrary to the objectives of the Upper Hunter Strategic Land-use Plan and contrary to the public interest.
227.	- Air Quality - Human Health	MSC	RA6	The National Environment Protection Measures, of no more than 50 micrograms per cubic metre of 10 micron particulate matter averaged over a 24 hour period (and having a target goal of no more than 5 breaches of that standard over a 12 month period) has already been exceeded in the Muswellbrook township and grossly exceeded in the Singleton township. The putative standard for the potentially more harmful 2.5 micron material has been exceeded substantially more in the Muswellbrook township. The standard sets a limit beyond which experts agree that human population health is intolerably compromised.
228.	- Air Quality - Cumulative - Human Health	MSC	RA6	The proposed development will contribute additional dust to the Upper Hunter air shed in circumstances where human health has already been intolerably compromised. The Proponent's air quality methodology avoids assessing the cumulative impact of its emissions on the tolerance threshold created by the standard in circumstances where the air shed has cumulatively exceeded the threshold. Council submits that the development will have an intolerable impact on human health and development approval should be refused.
229.	Air Quality	MSC	RA6	Further, and in the alternative, Council submits that the Proponent's application falls well short of best practice dust management.
230.	Air Quality	MSC	RA6	Council understands the preference of Drayton to use a smaller truck fleet due to the physical constraints of the site; however the following comment is made in relation to dust emissions.
231.	Air Quality	MSC	RA6	Wheel generated emissions are ranked as the primary source of TSP and PM2.5 emissions ¹⁰ (Katestone 2011). The 2011 NSW Coalmining benchmarking study further states: Mining Particulate matter emissions are proportional to the vehicle kilometres travelled (VKT) by haul trucks (i.e. lower VKT will result in a lower emission rate of particulate matter). Using larger capacity haul trucks can reduce the number of trips required to transport the same amount of material. Therefore, overall emissions can be reduced by replacing smaller capacity trucks with larger ones. ¹⁰ Katestone, 2011.
232.	Air Quality	MSC	RA6	The Katestone report indicates that the most cost effective dust control measure is to replace the current fleet with larger-capacity vehicles. The proposal to reduce the size of trucks in the approved fleet is contrary to

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				current best-practice recommendations suggested by <i>Katestone</i> that is the basis of the Pollution Reduction Program currently being implemented through Environmental Protection Licenses. While it is noted that the air quality assessment indicates that the modelled dust levels are within the typical ambient dust levels, it is considered that this option does not represent “best endeavours” or “best practice”.
233.	Air Quality	MSC	RA6	Further, Council notes that 12:00pm to 12:00am dust readings have typically been higher than daytime readings. A mix of different operational methods during the night together with air inversion compressions is likely to be contributing factors.
234.	Air Quality	MSC	RA6	Council notes that the night mining close to townships is a challenging environment but notes that routine high levels of dust emission during the night offset by lower day emissions (so as to approach but not exceed the daily average) is not best practice.
235.	Air Quality	MSC	RA6	Council notes that a condition requiring a maximum standard for night dust emissions and the use of larger capacity vehicles be imposed.
236.	General	MSC	RA6	While not being the consent authority, legislative change has repealed Part 3A, Council makes, on behalf of its community, comprehensive submissions as part of the approval process for all major developments – including recommending specific conditions of consent. Council's submission is invited by reason of statute and as consent authority for various attendant matters relating to the development.
237.	General	MSC	RA6	The process is exhaustive of staff time. Council is not appropriately resourced to conduct the important task of evaluating complex and lengthy applications – particularly in the absence of cumulative data. Council receives no application fee to offset the cost of the assessment of mining applications and the direct cost of that process is therefore directly borne by the community.
238.	- Aboriginal Heritage - Ecology	OEH	RA7	OEH received a printed copy of the 'Drayton South Coal Project Environmental Assessment' (the EA) on 15 November 2012 and has reviewed this document for potential impacts on Aboriginal cultural heritage, threatened biodiversity. As a result of this review, OEH has found that the Aboriginal cultural heritage aspects of the project have been appropriately dealt with. However a number of issues with the proposed biodiversity offset have been identified. A more comprehensive assessment of this project, in addition to some recommended conditions of approval are provided in Attachment 1.

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239.	Aboriginal Heritage	OEH	RA7	OEH has reviewed the Aboriginal cultural heritage aspects of this proposed development; particularly Sections 6.4, 8.9 and Appendix K of the EA. This assessment was conducted to consider potential impacts of the project on Aboriginal cultural heritage, and was done in accordance with OEH's Aboriginal cultural heritage assessment guidelines and the requirements of Part 6 of the <i>National Parks and Wildlife Act 1974</i> (NPW Act). Further details with recommended conditions of approval are provided below:
240.	Aboriginal Heritage	OEH	RA7	OEH acknowledges that the Aboriginal cultural heritage assessment has been undertaken in accordance with OEH's Aboriginal cultural heritage assessment requirements. The results of the Aboriginal cultural heritage assessment for the project area are also acknowledged. OEH notes that the proponent is committed to updating the existing Aboriginal Cultural Heritage Management Plan for the project area to incorporate the additional strategies developed to manage the likely impact on Aboriginal cultural heritage values associated with this project.
241.	Aboriginal Heritage	OEH	RA7	Legislative requirements The importance of protecting Aboriginal cultural heritage is reflected in the provisions of the NPW Act. Please note that the requirements of the NPW Act have been amended. It is strongly recommended that the proponent familiarises itself with the new requirements during the development and any subsequent assessment and/or development processes.
242.	Aboriginal Heritage	OEH	RA7	Conclusion OEH has no additional concerns with the Aboriginal cultural heritage assessment for the major project development application and recommends that the following conditions of approval for Aboriginal cultural heritage are reflected in any approval conditions for the project.
243.	Aboriginal Heritage	OEH	RA7	Recommended Conditions Of Approval For Aboriginal Cultural Heritage The proponent must consult with and involve all the registered local Aboriginal parties for the project, in the ongoing management of the Aboriginal cultural heritage values. Evidence of this consultation must be collated and provided to the consent authority upon request.
244.	Aboriginal Heritage	OEH	RA7	The proponent must update the existing Aboriginal Cultural Heritage Management Plan for the project area in consultation with the registered Aboriginal parties to detail procedures for managing all Aboriginal Cultural

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				heritage values associated with the project area. This process must be undertaken prior to commencing any ground disturbance or development works subject to the development.
245.	Aboriginal Heritage	OEH	RA7	In the event that ground disturbance identifies a new Aboriginal object/s within the project area, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified cultural heritage specialist and representatives of the local Aboriginal community must be contacted to determine the nature, extent and significance of the finds. The site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) (managed by OEH) and the management outcome for the site included in the information provided to AHIMS. The proponent must consult with representatives of the local Aboriginal community, and the cultural specialist to develop an appropriate management strategy for all objects/sites which complies with the requirements of the NPW Act.
246.	Aboriginal Heritage	OEH	RA7	If human remains are located in the event that surface disturbance occurs, all works must halt in the immediate area to prevent any further impacts to the remains. The NSW Police are contacted immediately. No action is to be undertaken until the NSW Police provide written notification to the proponent. If the skeletal remains are identified as Aboriginal, the proponent must contact OEH's Environment Line on 131 555 and representatives of the local Aboriginal community. No works are to continue until OEH provides written notification to the proponent.
247.	Aboriginal Heritage	OEH	RA7	All Aboriginal sites impacted by the project must have an Aboriginal Site Impact Recording form completed and be submitted to OEH's AHIMS Register within three months of being impacted.
248.	Aboriginal Heritage	OEH	RA7	An Aboriginal Cultural Education Induction Program must be developed for the induction of all personnel and contractors involved in the construction activities on site. Records are to be kept of which staff/contractors were inducted and when for the duration of the project. The program should be developed and implemented in collaboration with the registered Aboriginal parties.
249.	- Ecology - Rehabilitation	OEH	RA7	OEH has conducted an assessment of the proposed biodiversity offset for the impact of the proposed development and has found that all of the extensive rehabilitation planned is unlikely to contribute to the biodiversity offset package; that the impact on <i>Diuris tricolor</i> does not appear to have been adequately offset; and that there is uncertainty over the application of White Box - Yellow Box Blakely's Red Gum Woodland ('WBYBBRG Woodland') endangered ecological community (EEC) to some vegetation types. These matters

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				are discussed below in addition to some comments on proposed monitoring of the overall offset proposal and coordination of rehabilitation along Saddlers Creek with Mount Owen.
250.	Ecology	OEH	RA7	According to the EA, the proposed Drayton South Coal Mine, and associated infrastructure would clear a total of about 1, 928 hectares (ha) over a period of 27 years that includes: - About 460 ha of EEC and Vulnerable Ecological Community (VEC) vegetation - including about 181 ha of WBYBBRG Woodland and derived grassland - A number of threatened plants (2 clumps of Weeping Myall (<i>Acacia pendula</i>) and 30 plants of Pine Donkey orchid (<i>Diuris tricolor</i>)) - One plant of Tiger Orchid (<i>Cymbidium canaliculatum</i>) which is part of the Endangered Population of <i>Cymbidium canaliculatum</i> in the Hunter Catchment - Known suitable habitat for a range of threatened flora and fauna species. The proposed biodiversity offset strategy, developed in accordance with 'Principles for the use of biodiversity offsets in NSW' (OEH, 2011) comprises 3,653 ha of vegetation that includes the following: - An on-site offset of 85 ha of remnant woody vegetation that includes Central Hunter Box – Ironbark Woodland EEC; rehabilitation of Central Hunter Box Woodland EEC and Narrabeen Footslopes Slaty Box Woodland VEC on the Drayton South disturbance footprint, and restoration of 86 ha of vegetation along Saddler Creek. - An offsite offset of 2,079 ha that is about 28 kilometres north-north-west of Murrurundi, and is in the Namoi River catchment. This offsite offset contains about 1,672 ha of reported White Box – Yellow Box - Blakely's Red Gum woodland EEC, including 898 ha in its derived grassland form . Six threatened fauna species have been detected so far on this property. OEH notes that most of the on-site component of the Biodiversity Offset package comprises restoration and rehabilitation, which appears consistent with the argument presented in the EA that most of the ecological impacts of the mine are reversible if appropriate effort is put into subsequent restoration and rehabilitation (e.g. Appendix J, p. 7.35). Theoretically this may be true, however, OEH has limited scope for the acceptance of revegetation as a Biodiversity Offset in the framework of the 'Principles for the use of biodiversity offsets in
251.	- Ecology - Rehabilitation	OEH	RA7	
252.	- Ecology - Rehabilitation	OEH	RA7	

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				NSW'. This stems from three issues: • That there is no guarantee of success of recreating natural vegetation communities and full ecosystem function (Principles 5, 6, 9 & 10); • That there will be a time lag in planted vegetation being able to provide food and shelter resources for threatened species (Principle 7); and • That a proportion of this planned revegetation may be an existing requirement of other obligations, such as under the Mining Act 1992, and thus may not be supplementary with other requirements (Principle 12),
253.	• Ecology	OEH	RA7	Securing biodiversity offsets Section 9.5 of Appendix J of the EA discusses how the offset lands will be permanently protected and lists five mechanisms that may be used to secure these offsets, OEH no longer supports rezoning of the land or the application of conservation covenants under Section 88 of the <i>Conveyancing Act 1919</i> as means of securing offsets. This is because both of these options can be readily removed, and therefore they do not provide permanent protection of such land for conservation, OEH recommends that the conservation measures listed in Section 126L of the <i>Threatened Species Conservation Act 1995</i> (TSC Act) are considered as ways as securing the offsets for this proposal; noting that not all of these options will be applicable for a Major Project.
254.	• Ecology • Rehabilitation	OEH	RA7	Rehabilitation as part of the offset package OEH notes that the proponent wishes to revegetate the post-mined landscape of the Drayton South Mine with a range of trees, shrubs and forbs propagated from indigenous species (EA, Appendix J, section 8.2.2) to ultimately create about 777 ha of Central Hunter Box - Ironbark Woodland EEC and about 555 ha of Narrabeen Footslopes Slaty Box Woodland (EA, Appendix J, section 9.2.3); these are EEC and Vulnerable ecological communities (VECs). The proponent also intends to restore riparian vegetation along the full length of Saddlers Creek to the west of the proposed mine (EA, Appendix J, section 9.2.1), which includes retaining and improving 24 ha of remnant woodland and restoring about 62 ha of Hunter Floodplain Red Gum Woodland, OEH commends these plans, but takes this opportunity to state that available information on projects to date to recreate EEC or VEC vegetation have been largely unsuccessful. In addition, and as recognised in the EA (Appendix J, section 9.2.4), such plantings require time before trees and shrubs reach

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				flowering size, or for trees to develop hollows, and thus there is a lag time of years or decades before the area will be able to provide food and shelter resources for a range of local threatened fauna species (particularly microbats and declining woodland birds).															
255.	Ecology	OEH	RA7	BioBanking assessment of the proposed development and offsets OEH acknowledges that the proponent has not used BioBanking to formulate its offsetting package and thus has not conducted an assessment of this project with the BioBanking credit calculator. BioBanking offers a way of quantifying biodiversity values using a standard approach and so has run data from the EA through the credit calculator (version 2.0). Where required data was not available from the EA assumptions were made (such as all wooded vegetation communities being at benchmark condition). The results of this assessment are summarized in Table 1.															
256.	Ecology	OEH	RA7	Table 1. Summary of results of a BioBanking assessment of the proposed development and offsets <table> <tr> <th></th><th>Development Site</th><th>Onsite Offset</th><th>Offsite Offset</th><th>Total Offset</th></tr> <tr> <td>Ecosystem Credits</td><td>32150</td><td>804</td><td>11434</td><td>12238</td></tr> <tr> <td>Species Credits</td><td>515</td><td>0</td><td>60</td><td>60</td></tr> </table> This assessment revealed that the proposed offsets provide about 40 per cent of the required number of the ecosystem credits and about 12 per cent of the species credits for the project, and further that none of the vegetation communities in the offsite offset were identified as appropriate vegetation communities to offset the vegetation communities to be cleared.		Development Site	Onsite Offset	Offsite Offset	Total Offset	Ecosystem Credits	32150	804	11434	12238	Species Credits	515	0	60	60
	Development Site	Onsite Offset	Offsite Offset	Total Offset															
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257.	Ecology	OEH	RA7	Interim offsetting policy assessment of the proposed development and offsets OEH has also reviewed the proposal in light of the 'NSW OEH interim policy on assessing and offsetting biodiversity impacts of Part 3A, State significant development (SSD) and State significant infrastructure (SSI) projects' (OEH 2011). OEH acknowledges that the proponents have not chosen to use this policy in the preparation of their offset package; however, OEH is using this policy framework as a guide to assessing the offset proposal. This interim policy is also based on the BioBanking Assessment Methodology and has a three-tiered approach in which Tier 1 ('Improve or maintain') is the full application of BioBanking. OEH notes															

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				that the remnant vegetation in the on-site offset does not generate as many credits as the same vegetation types in the development site, and that the vegetation communities in the offsite offset do not match the offset options by way of vegetation type and thus does not enable the offsetting requirements to be fully met in the context of the BioBanking assessment methodology; therefore the project as described does not meet 'Tier 2' (No net loss) of the Interim Policy.
258.	Ecology	OEH	RA7	The 'Tier 3' (mitigated net loss) outcome in the policy allows for clearing of 'Red Flag' vegetation, not necessarily retiring all credits generated from the development but providing at least twice the amount of remnant woody vegetation in the offset package than that which will be cleared. This project, as described in the EA is consistent with the first two criteria and by the inclusion of about 1,290 ha of woody remnant vegetation in the offset package, thereby providing about 3.3 times the amount of woody vegetation to be cleared also meets the third criteria for this interim, policy. Therefore, based on a cursory assessment, it appears that this project could meet the 'Tier 3' outcome of the interim policy.
259.	Ecology	OEH	RA7	White Box - Yellow Box - Blakeley's Red Gum Woodland assessment According to the EA many of the vegetation communities in the development site and the offsite-offset are considered to meet the definition of 'White Box - Yellow Box - Blakeley's Red Gum woodland' (WBYBBRG Woodland) EEC as per Schedule 1 of the TSC Act (e.g. Tables 5.1 and 10.1 in Appendix J of the EA). Note that for this assessment only state-listed threatened entities are being considered. The final determination of this EEC includes the derived grassland version of the original grassy woodland where the characteristic tree species are now missing. However, the EA does not clearly explain how vegetation communities were determined to be WBYBBRG Woodland primarily because it does not include an assessment of each nominated vegetation community against each section of the NSW Scientific Committee Determination. In addition, Figure 4.4 in Appendix J of the EA suggests that all 22 vegetation quadrats conducted in the offsite offset targeted woody vegetation rather than derived grasslands. Therefore, it is not clear what data has been collected to support the allocation of derived grasslands in the offsite offset as WBYBBRG Woodland. The EA does not provide data (such as dominant groundcover species, slope, aspect soil and underlying geology) that would allow the reader of the EA to assess the different vegetation communities identified against the criteria for WBYBBRG Woodland EEC. Whilst OEH acknowledges that this EEC is likely to be present on some of the offsite offset, the widespread recognition of this EEC on the offsite offset appears to be

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				unsubstantiated. This is particularly so where the vegetation is derived grassland. Two examples are described below:
260.	Ecology	OEH	RA7	River Oak Riparian Woodland As described in Section 10.2.6 of Appendix J of the EA the 'River Oak riparian woodland' is an open creek or forest that occurs along creeks on the offsite offset property. A cursory check of available drainage maps indicates that this vegetation community occurs along Class 3 drainage lines (as per the Strahler stream classification system (Strahler 1952)). The vegetation type, as described in the EA is a riparian community whereas White Box - Yellow Box - Blakeley's Red Gum Woodland occurs on '...undulating midslopes and lower slopes' (Catchment Management Authority, undated) rather than from riparian communities. In addition, most of the species described in this vegetation community are not listed as characteristic species for the EEC. Therefore, based on the position in landscape of this vegetation community, and its composition it does not appear to meet the definition of WBYBBRG Woodland EEC.
261.	Ecology	OEH	RA7	Low Diversity Derived Grassland Section 10.2.9 of Appendix J of the EA describes the 'Low Diversity Derived Grassland' on the offsite offset. The final section of the description suggests that "", some areas are likely to conform to the TSC Act listing for WBYBBRG Woodland, " Whilst trees of Yellow Box and White Box - Grey Box intergrades have been found in this vegetation community (which are characteristic trees of this EEC) the EA provides little additional data to support any of this vegetation community matching the Scientific Committee determination for WBYBBRG Woodland. Despite this, all 555 ha of this vegetation community on the onsite offset (EA, Appendix J; Table 10.1) is attributed to this EEC. From the information provided OEH does not support this generous allocation of EEC status to this vegetation community.
262.	Ecology	OEH	RA7	In conclusion, OEH currently considers that the biodiversity offset provides less White Box - Yellow Box - Blakeley's Red Gum woodland EEC than the 1,672 ha (774 ha woody; 898 ha grassy) stated in the EA (Main Report, Table 54). The exact area of vegetation that conforms to this EEC is not clear (e.g. section 10.2.9 of Appendix J). Therefore, OEH recommends that the proponent provides further information to demonstrate how the different vegetation communities meet the NSW Scientific Committee determination of this EEC. In the event that less of this EEC is present in the biodiversity offset than claimed OEH recommends that some

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				additional land is included in the offset package that contains extant unambiguous examples of this EEC, such as from the eastern side the proposed development footprint (as shown in Figure 61 of the Main Report of the EA).
263.	Ecology	OEH	RA7	Threatened Plant Species The proposed development site contains about 30 plants of <i>Diuris tricolor</i> and two clumps of Weeping Myall (<i>Acacia pendula</i>); both of which are threatened species, It also contains one plant of Tiger Orchid (<i>Cymbidium canaliculatum</i>) which is part of the threatened population in the Hunter Catchment. These species are not represented in the onsite offset. Whilst a plant of Tiger Orchid has been found in the offsite offset, this is in the Namoi River catchment, and is therefore not part of the endangered population, OEH considers that the offset package does not adequately offset the loss of these plants, particularly <i>Diuris tricolor</i> and recommends that this is addressed, particularly by the addition of land containing extant plants of these species.
264.	Ecology	OEH	RA7	In the case of <i>Diuris tricolor</i>, OEH is aware that plants of this species occur in the Drayton Wildlife Refuge, however, the status of this refuge does not ensure their conservation in perpetuity. The Drayton Wildlife Refuge was established in 1987 under provisions in Part 4, Division 11 of the NPW Act. It should be noted that under these provisions a wildlife refuge may be revoked at any time.
265.	Ecology	OEH	RA7	The proponent may be able to offset the impacts on <i>Diuris tricolor</i> by ensuring that portions that contain this rare orchid are protected in perpetuity parts of the Drayton Wildlife Refuge (particularly on the northern side of Thomas Mitchell Drive) are protected by such means as the placement of a Conservation Agreement under Part 4, Division 12 of the NPW Act or a BioBanking Agreement under Part 7A, Division 2 of the TSC Act on that land. The additional protection of the Drayton Wildlife Refuge would also serve to improve the security of land containing extant EEC vegetation, such as Hunter Lowland Red Gum Forest, which is also being affected by this project.
266.	Ecology	OEH	RA7	Indigenous plants of Weeping Myall in the Hunter Valley are barely fertile but tend to be long-lived and suckering plants that naturally form nearly monospecific clumps (Bell <i>et al.</i>, 2007). To date there is no evidence that plants of this taxon can be successfully translocated. However, the epiphytic Tiger Orchid is able to grow on many different hosts and available evidence suggests it may be successfully translocated. If this option is undertaken, which OEH normally does not endorse, then OEH recommends that the 'Guidelines

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				for the Translocation of threatened plants in Australia' (Vallee <i>et al.</i> , 2004) are followed, and that that plant is moved to suitable remnant woody vegetation as close as possible to the site where the plant naturally occurs. OEH does not support translocation of this plant outside of the Hunter catchment (see below).
267.	- Ecology - Rehabilitation	OEH	RA7	Monitoring of Mine Site Rehabilitation and Other Vegetation OEH notes that the proponent is planning on monitoring mine site rehabilitation and revegetation, and comparing results against local reference sites (EA, Appendix J, section 8.3). OEH supports this approach, especially as it includes data analysis in which the results may be used to trigger adaptive management. OEH recommends that the data analysis includes appropriate statistical analysis, perhaps 'Analysis of similarity (ANOSIM)', that would enable trends to be detected before they become obvious, and thus will enable adaptive management to be implemented thereby enabling the best use of resources and providing a better chance of rehabilitations outcomes for the project being achieved. Natural regeneration of native vegetation following removal of livestock has been raised in different parts of the EA (e.g. Appendix J, section 5.1) as a way of improving the biodiversity values of offset land. Whilst native vegetation does indeed respond favourably when grazing pressure is removed not all species may return to a vegetation community. This may be due to local extinction of grazing-sensitive species or that established plants, including perennial exotic tussock grasses, may now prevent certain species from becoming re-established. Statistical analysis of quadrats in regenerating native vegetation would enable the rate of vegetation recovery, based on species diversity to be measured and thus test the hypothesis that stock exclusion alone can lead to full recovery of at least some native vegetation communities. It would also enable adaptive management to be implemented where this was proving not to be the case, which, for example, may then require the local reintroduction of some grazing-sensitive species.
268.	Ecology	OEH	RA7	Relocation of Threatened Plants It should be noted that OEH normally does not endorse the relocation of threatened species. This is due to the usually limited chance of success and also due to unforeseen circumstances with how translocated organisms may interact with individuals of the same species already in situ. However, epiphytic orchids like the Tiger Orchid (<i>Cymbidium canaliculatum</i>) appear to have a higher chance of successful translocation than other species. Therefore, if endorsed by DP&I, OEH recommends that any translocation attempt for the plant
269.	Ecology	OEH	RA7	

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				of this species recorded in the Drayton South development footprint is done in accordance with the 'Translocation Guidelines for Threatened Plants in Australia: Second edition' by Vallee <i>et al.</i> (2004).
270.	Ecology	OEH	RA7	OEH notes that a plant of Tiger Orchid (<i>Cymbidium canaliculatum</i>) has been found on the proposed offsite offset. As noted in the EA (Appendix J, p. 10.33) this record occurs outside of the Hunter catchment and is therefore not part of the Endangered <i>Cymbidium canaliculatum</i> population in the Hunter Catchment. Whilst there is value in protecting this species across its range the plant on the offsite offset is not part of the endangered population and therefore is not able to offset the loss of the plant on the development site.
271.	- Rehabilitation - Ecology	OEH	RA7	Saddlers Creek Rehabilitation and Conservation The section of Saddlers Creek immediately upstream of the Drayton South lease is covered by the Saddlers Creek Conservation Area that protects both Aboriginal cultural heritage and threatened biodiversity on the Mount Arthur Coal Complex Mine Lease (e.g. as per PA 06_0091). OEHL therefore recommends that the proponent works collaboratively with the operators of the Mount Arthur Coal Complex to ensure that their planned revegetation compliments the work being done on the Mount Arthur land. Interestingly, the assessment of poor water quality and low biological activity in Saddlers Creek downstream of areas of rehabilitation from the Mount Arthur lease (EA, Appendix J, section 6.5), suggests that restoration of this aquatic ecosystem and its associated riparian corridor will take considerable time and effort.
272.	- Ecology - Rehabilitation	OEH	RA7	Conclusions The proposed offset package includes remnant woody vegetation, native derived vegetation, revegetation of disturbed vegetation and recreation of vegetation on a post-mined landscape. Whilst the proposed revegetation of the post-mined landscape and restoration of vegetation along Saddlers Creek are positive works they are unable to make more than a small contribution to the offset package for this project under the offsetting policy framework chosen. It is not yet clear how much post-mining rehabilitation, and of what type, will be required under the Mine Operation Plan (under the <i>Mining Act 1992</i>), and how this will be identified from additional rehabilitation for restoring local biodiversity.
273.	Ecology	OEH	RA7	The offset package includes a larger area of remnant woody vegetation than that which will be cleared and largely meets OEHL's offsetting requirements, as defined by the 'Principles for the use of biodiversity offsets in NSW'. However, not all vegetation types in the proposed offset areas necessarily meet the 'like for like or

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				better' component, particularly if their EEC determinations are now supported. This is particularly so of White Box - Yellow Box - Blakeley's Red Gum Woodland EEC which has not been adequately demonstrated to hold for a number of vegetation communities. If the proponent is unable to justify how the vegetation communities considered to be WBYBRG woodland meet the NSW Scientific Committee determination for this EEC, then OEH recommends additional offset land with extant stands of this EEC are provided. OEH also considers that the offset does not adequately offset the impacts on <i>Duiris tricolor</i> or the Tiger Orchid and suggests ways in which this may be addressed.
274.	Ecology	OEH	RA7	Finally, OEH recommends that data obtained from monitoring is analysed using appropriate statistical analysis. This will enable trends to be detected before they become obvious and can thus enable adaptive management to be implemented to ensure that available resources are efficient used to achieve the stated biodiversity outcomes.
275.	Ecology	OEH	RA7	Recommended Conditions Of Approval For Threatened Biodiversity That any clearance of threatened species, populations or communities, or their habitats, or harm caused by mine subsidence due to this development must be offset in accordance with OEH offsetting policy. That is, either the 'Principles for the use of biodiversity offsets in NSW' (DECC, 2011) or the 'NSW OEH interim policy on assessing and offsetting biodiversity impacts of part 3A, State significant development (SSD) and State significant infrastructure (SSI) projects (OEH, 2011).
276.	Ecology	OEH	RA7	That the proponent demonstrates that the proposed offset package contains as much White Box - Yellow Box - Blakeley's Red Gum Woodland endangered ecological community as stated in the EA. In the event that the offset package contains less of this EEC than claimed, that additional offset land containing this EEC is included in the offset package; such as from remnant Upper Hunter White Box - Ironbark Grassy Woodland from the eastern side of the project area (EA, Main Report, Figure 61).
277.	Ecology	OEH	RA7	That the proponent provides land with extant plants of <i>Duiris tricolor</i> as part of the offset package. This could be achieved by providing in-perpetuity protection to land with <i>Duiris tricolor</i> plants currently in the Drayton Wildlife Refuge. Appropriate increased protection of land currently in the Drayton Wildlife Refuge could be achieved by the implementation of a Conservation Agreement under Part 4, Division 12 of the <i>National Parks and Wildlife Act 1974</i> , or a BioBanking Agreement, under Part7A, Division 2 of the <i>Threatened Species</i>

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				<i>Conservation Act 1995.</i>
278.	- Ecology - Rehabilitation	OEH	RA7	That the proponent's monitoring of rehabilitation and restoration and reference sites includes analysis by appropriate statistical analysis and that the monitoring data, statistical analysis and underlying assumptions are made freely and publically available within six months of data collection. This will ensure that lessons learnt from this project may be able to be applied to other rehabilitation projects in the Hunter Valley as soon as possible.
279.	Ecology	OEH	RA7	That pre-clearing surveys are conducted by a suitably qualified and experienced ecologist (as per DEC, 2004).
280.	Ecology	OEH	RA7	That the translocation of any threatened flora from the development site is conducted in accordance with the 'Guidelines for the Translocation of Threatened Plants in Australia: Second Edition' (Vallee <i>et al.</i> , 2004) and
281.	Rehabilitation	OEH	RA7	That the proponent coordinates its proposed rehabilitation works along Saddlers Creek with the adjacent Saddlers Creek Conservation Area on the Mount Arthur Mine lease.
282.	Bushfire	RFS	RA8	The NSW Rural Fire Service (RFS) has reviewed the Environmental Assessment and provides the following comments: New mine site facilities including workshops, administration, training and amenities buildings shall comply with <i>Australian Standard AS3959 Construction of buildings in bush fire prone areas.</i>
283.	Bushfire	RFS	RA8	A Bush Fire Emergency Evacuation Plan is to be prepared in accordance with the NSW Rural Fire Service document <i>Guide for Developing a Bush Fire Emergency Evacuation Plan.</i>
284.	Traffic and Transport	RMS	RA9	RMS Responsibilities Transport for NSW and RMS' primary interests are in the road network, traffic and broader transport issues, particularly in relation to the efficiency and safety of the classified road network, the security of property assets and the integration of land use and transport. In accordance with the Roads Act 1993, RMS has powers in relation to road works, traffic control facilities, connections to roads and other works on the classified road network. The New England Highway (HW9), Golden Highway (HW27) and Denman Road (MP209) are classified (State) roads. RMS concurrence is required for connections to these roads with Council consent, under Section 138 of the Act. Council is the

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				roads authority for these roads and all other public roads in the area. Should road works be required on the classified (State) road, RMS would exercise the functions of roads authority under Sections .64 and 71 of the Act.
285.	Traffic and Transport	RMS	RA9	RMS Response and Requirements RMS has reviewed the information provided, in particular the Traffic and Transport Impact Assessment (21 September 2012) prepared by DC Traffic Engineering Pty Ltd, and considers the study to be inadequate in addressing all road infrastructure and traffic/transport issues related to the proposed development.
286.	Traffic and Transport	RMS	RA9	RMS requires the electronic data to be able to analyse the modelling undertaken to verify road infrastructure upgrade requirements. While the study proposes certain immediate and future works related to State road infrastructure it needs further verification given the extended period for the life of the mine.
287.	Traffic and Transport	RMS	RA9	In the absence of the complete Traffic and Transport Assessment, RMS requests that the following preliminary requirements be adopted and additional information be provided to enable an appropriate assessment: Prior to the commencement of construction activities and the mining operation associated with the proposed project the intersection of the Golden Highway (HW27) and Edderton Road shall be upgraded to a Type CHR / AUL intersection in accordance with Part 4A of the <i>Austroads Guide to Road Design 2009</i> (with RMS supplements), to the satisfaction of RMS and Council.
288.	Traffic and Transport	RMS	RA9	The following requirements will apply to the intersection: - Edderton Road shall be aligned to intersect the Golden Highway at 90 degrees. - The intersection shall be designed to accommodate the turning path of the largest design vehicle. - Provision shall be made at the intersection for on-road cyclists for the full scope of intersection works. - Street lighting shall be provided in accordance with Australian Standard AS1158, or as determined by RMS. - Advanced intersection warning and all other road signs shall be provided on the Golden Highway, as determined by RMS.

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289.	Traffic and Transport	RMS	RA9	The Traffic and Transport Assessment report has focussed on traffic along Edderton Road and its connection with Denman Road. The EA has not addressed existing and future traffic conditions at the Edderton Road / Golden Highway intersection, nor has it demonstrated the adequacy of the proposed intersection layout.
290.	Traffic and Transport	RMS	RA9	A traffic analysis shall be undertaken and submitted in support of the detailed concept plans required for assessment under the Works Authorisation Deed (WAD) process. This report shall demonstrate the adequacy of the proposed intersection design in relation to traffic volumes, vehicle types and safe intersection sight distance on all legs of the intersection.
291.	Traffic and Transport	RMS	RA9	On relocation of the Golden Highway / Edderton Road intersection, the existing Edderton Road intersection shall be legally and physically closed to general traffic. Should the intersection be retained as an 'Emergency Access' to the mine site, as stated in the EA, then the access is to be gated and clearly signposted so as to indicate the nature of the access. The conditions for use of the access shall be captured in a 'Plan of Management' for the mine and any future change to the status the access for general traffic shall be subject to further approval under a modification of the project approval and accompanied by a traffic impact statement clearly addressing related traffic conditions and any necessary intersection improvements.
292.	Traffic and Transport	RMS	RA9	A Construction Traffic Management Plan shall be prepared to the satisfaction of RMS and Council prior to any construction works related to this proposal.
293.	Traffic and Transport	RMS	RA9	As road works are required on a classified (State) road, RMS will require the developer to enter into a 'Works Authorisation Deed' (WAD) with RMS. RMS will exercise its powers under Section 87 of the Roads Act 1993 (the Act) and the functions of the roads authority, to undertake road works in accordance with Sections 64, 71, 72 and 73 of the Act, as applicable, for all works under the WAD. Prior to issuing a 'Construction Certificate' for the proposed development, the developer shall enter into a WAD with RMS. Prior to issuing an 'Occupation certificate' (interim or final) for the proposed development the developer shall complete all works under the WAD to practical completion, as determined by RMS.
294.	Traffic and Transport	RMS	RA9	Advice to the Department of Planning & Infrastructure The necessary road and transport infrastructure improvements required as a direct result of cumulative mining projects in the area should be fully funded by the developers or via an appropriate contributions plan.

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				RMS notes that the EA has highlighted future impacts to the classified road network arising from the combined impacts of employee related vehicle movements associated with peak traffic conditions generated by mining operations in the area, not attributable to any single mining development.
295.	Traffic and Transport	RMS	RA9	As the current proposal does not seek to increase its existing operational staffing the developer has raised the issue that this development alone should not be entirely responsible for the cost of constructing appropriate infrastructure to support this identified demand.
296.	- Traffic and Transport - Cumulative	RMS	RA9	RMS requests that the Department of Planning & Infrastructure, in consultation with Transport for NSW, consider an appropriate funding mechanism to address the cumulative impacts of traffic impacts arising from employee and service related traffic associated with mining operations within the Hunter Region. It appears there is no current funding mechanism to give effect to all mines making a contribution to upgrading the classified (State) road network which services the mining activities in the region.
297.	Traffic and Transport	RMS	RA9	It is strongly suggested that a traffic and transport strategy be developed for the Lower and Upper Hunter Regions, which would form the basis for a possible contribution plan. Contributions could be made through Voluntary Planning Agreements (VPAs) or similar, with funds directed to State road infrastructure upgrades, as determined by RMS.
298.	Traffic and Transport	RMS	RA9	On the determination of this matter, it would be appreciated if a copy of the Project Approval is forwarded to RMS for record and / or action purposes. The proponent should forward the required traffic information to RMS directly for assessment and confirmation of road infrastructure requirements.
299.	Traffic and Transport	RMS	RA9	The following are not included in this table: Attachment A: Preliminary WAD advice to consent authority and developer

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300.	Traffic and Transport	NSW Transport	RA10	Transport for NSW has reviewed the EA and associated Traffic and Transport Impact Assessment report and has identified a number of issues associated with the proposal that will be required to be addressed by the proponent. These issues are referred to in greater detail in Attachment A. Transport for NSW understands that Roads and Maritime Services (RMS) and the Australian Rail Track Corporation (ARTC) Limited will be providing separate responses in due course. Transport for NSW would appreciate the opportunity to provide further input during the response to submissions process
301.	Traffic and Transport	NSW Transport	RA10	The following is a summary of issues identified by Transport for NSW upon undertaking a review of the EA and Traffic and Transport Impact Assessment report for the above proposal. The EA documentation cites the ARTC 2009 Hunter Valley Corridor Capacity Consultation document. Subsequent to the issue of the ARTC 2009 Strategy, ARTC has issued revised strategies in 2011 and 2012. The EA documentation should reference the most recent documents and demonstrate engagement with ARTC, the Hunter Valley rail network owner.
302.	Traffic and Transport	NSW Transport	RA10	The train type described on page 71 of the Traffic and Transport Impact Assessment report does not reflect those operating on the Hunter Valley rail network. Trains serving most mines in the Hunter Valley use either 80 or 90 x 120 tonne gross wagons (noted on page 28) not 100 tonne wagons. It is also noted that 120 tonne wagons generally carry 95 to 98 tonnes of coal. However, the assumed payload of 8500 tonnes per train is considered appropriate.
303.	- Cumulative - Traffic and Transport	NSW Transport	RA10	It is noted that Edderton Road will be realigned for the Drayton South project (southern end) and again in 2019 for BHP-Billiton's Mt Arthur coal mine (northern end). The documentation does not outline the cumulative impact of the realignment works or whether there is a community benefit from undertaking these works jointly.
304.	Traffic and Transport	NSW Transport	RA10	Figure 17 in the Traffic and Transport Assessment report does not include a legend making it difficult to interpret the information displayed in it. This should be addressed by the proponent.
305.	- Air Quality - Blasting	NSW Health	RA11	The application for the Drayton South Coal Project has been reviewed by Hunter New England (HNE) Population Health with particular attention being paid to management of issues such as air quality, noise and

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	- Human Health - Noise			vibration, water and other issues which may have an impact on public health.
306.	Air Quality	NSW Health	RA11	The following issues are discussed and should be considered in the approval process for this project: The Drayton South Coal Project is in close proximity to residential dwellings that will be impacted by particulate matter – particularly along the southern border of the project. Comments are focussed on PM₁₀ levels, which are more likely to be of concern than PM2.5 levels, and to the impact on private residences, assuming that the mine would vacate occupants of any mine owned residences subject to adverse air quality.
307.	Air Quality	NSW Health	RA11	The air quality modelling suggests that the project alone could add up to 50-106 µg/m³ to the maximum 24 hour PM₁₀ for six private residences which is a significant increase given the 24 hour average goal is 50 µg/m³. Twelve private residences are predicted to be subject to between 10 and 102 exceedances of the 24 hour average PM₁₀ goal of 50 µg/m³ in year 10 of the project.
308.	Air Quality	NSW Health	RA11	There are predicted exceedances of the annual average PM₁₀ goal of 30 µg/m³ criteria at three private residences with most residences subject to cumulative annual average PM₁₀ levels of 15-19 µg/m³ with over 10 residences subject to annual average PM₁₀ levels in the range of 20-25 µg/m³.
309.	Air Quality	NSW Health	RA11	The EA assumes that PM₁₀ level goals will remain static throughout the duration of the 27 year project. Even if regulatory goals do not decrease, societal expectations of cleaner air will increase. Urban air in Sydney will continue to improve in quality while the air quality in the Drayton South project area will worsen and in many areas exceed the PM₁₀ levels in Sydney. The California Air Resources Board Standard annual average goal for PM₁₀ is 20 µg/m³. Any modelling beyond a 10 year timeline could consider that the annual average PM₁₀ goal may have been reduced to below 30 µg/m³ over that time period.
310.	Air Quality	NSW Health	RA11	Thus, the Drayton South Project air quality modelling suggests a significant increase in particulate impacts for the community. Additionally, it is unlikely that current air quality goals will be acceptable 27 years into the future of the project.
311.	Noise	NSW Health	RA11	Many properties are predicted to experience mild to moderate noise impacts. The EA does not clearly demonstrate that the community residing within the noise impacted area have been consulted and offered

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				methods to mitigate noise impacts.
312.	- Air Quality - Human Health	NSW Health	RA11	The EA does not mention issues associated with water quality from rainwater tanks at residences without a reticulated water supply. Whilst it is acknowledged that mining operations are unlikely to contribute metal contamination to tanked rainwater, the physical attributes of water may be impacted by mining construction and operations. It is recommended that the applicant address the issue of potential impacts on rainwater quality.
313.	- Air Quality - Human Health	NSW Health	RA11	A management system of taking complaints and rectifying issues identified should be considered. The peak reference document in Australia for information in relation to rainwater tanks is the enHealth, Guidance on use of rainwater tanks. This document can be accessed on the web at: http://www.health.gov.au/internet/main/publishing.nsf/Content/DD676FA1241CDD0DCA25787000076BCD/\$File/enhealth-raintank.pdf It would be appropriate to apply this standard to rainwater tank systems within the vicinity of the mine in a proactive manner.
314.	Stakeholder Consultation	NSW Health	RA11	It would be useful to have an independent assessment of community satisfaction with the stakeholder engagement program to provide reassurance of the applicant's performance in this important area and guidance for future improvement if required.
315.	- Social - Economics	NSW Health	RA11	Property Devaluation is identified as one of the nine key stakeholder issues on page 5 of Appendix D: Stakeholder Engagement of the EA. This section advises that this issue will be addressed in the EA. However, it appears that the Property Devaluation assessment was not included in the final EA.
316.	Cumulative	UHSC	RA12	While the Drayton mining lease area is located wholly within the boundaries of an adjoining local government area, the Council feels compelled to make a submission and highlight the cumulative impacts of coal mining which extend at a regional scale and far beyond the boundaries of this and other mining operations within the Muswellbrook Shire.
317.	- Economics - Social	UHSC	RA12	The Upper Hunter is in the unique position of having no operating coal mines, but having large population centres such as Aberdeen, located as close to operating or proposed mine sites as the townships of Muswellbrook and Denman. The evidence is clear that the Upper Hunter experiences the same adverse

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				environmental impacts and the social and economic challenges resulting from the rapid expansion of mining that are common to Muswellbrook.
318.	- Cumulative - General	UHSC	RA12	Despite these similarities, the council has no ability to negotiate with mining operators and reach consensus on how to address these impacts, simply because the mines are located within a neighbouring shire. It is a source of frustration for the council that we do not have a legitimate "seat at the table" to raise community concerns about the broader impacts of mining which are experienced at a regional level or to negotiate reasonable offsets in the Upper Hunter Shire to community infrastructure, where the direct and cumulative impact of developments such as this are known. The Council strongly believes that this is an inequitable and unsustainable situation that needs to be addressed by the NSW Government in the assessment and approval of large scale mining activities.
319.	- Agriculture - Economics	UHSC	RA12	The Council accepts that mining is an important economic driver for the region, but this should not come at the expense of other already established agricultural activities and rural industries which depend on fertile soils, clean water and pristine vistas. The Upper Hunter Council was successful in arguing that open cut coal mining was incompatible with many established rural industries, particularly the Equine Industry which was noted in the rejection of the Bickham Coal Mine proposal. We believe that many of the fundamental planning principles from that case are relevant to the current proposal by Anglo American for the Drayton South proposal.
320.	- Agriculture - Ecology - Social - Tourism	UHSC	RA12	The Council has previously made detailed submissions to the Department of Planning and Infrastructure and NSW Government on the regional impacts of coal and coal seam gas mining. In these submissions we have highlighted the regional importance of the Equine and Viticulture Industries in the Upper Hunter, the wealth and social cohesion derived from agricultural production, the potential for expansion of emerging tourism opportunities and the need to protect the natural ecology and biodiversity of the area. The Council accepts the reality of continued mining in the Hunter but not at the expense of a strong and diverse agricultural sector or at the long term disadvantage of other emerging opportunities which will provide a more sustainable future. The adverse impacts of mining are well known and irrefutable and occur at a regional level. The benefits of mining are concentrated locally or exported from the area where the resource was derived, without a proper reallocation of resources. The council is repeating its request that the adverse impacts of mining be carefully

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				considered and minimised to the largest extent possible and the benefits of mining be shared more equitably.
321.	- Groundwater - Surface Water - Water Licensing	NOW	RA13	The water balance relies upon a number of water sources which may be harvested and temporarily stored on-site and in the existing Drayton operation post-closure. This creates uncertainty as to the regulation of such water harvesting, and requires quantification to determine the licensing requirements for the proposal under the Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009 (WSPHUAWS). The assumption that water supply from the existing Drayton open cut operation may occur without consideration of separate licensing obligations under the WSPHUAWS requires assessment against the rules of the WSPHUAWS and consideration of potential non-compliance under Section 60A of the Water Management Act 2000 (WMA) should harvesting of runoff water continue following completion of mining operations at the existing Drayton coal operation.
322.	- Groundwater - Surface Water - Water Licensing	NOW	RA13	No accounting is proposed for the take of water from the Jerrys Water Source (Saddlers Creek) surface and alluvial system. No presumption may be made that accounting for the take of water from the Saddlers Creek and/or its alluvium is limited to licences which may be obtained under Part 5 of the Water Act 1912 (WA). The operational rules of the WSPHUAWS define the limits to available water, and commencement of minimum and low flow protection rules commencing in 2015 under Clause 17(1)(y). This may not apply to the Drayton South project if mining excavation is limited to beyond 40 metres from the top of bank of Saddlers Creek. However, the project may not be able to account for water taken from the Jerrys Water Source (Saddlers Creek), as the sum of access licence shares in the water source exceeds the total number of shares at the commencement of the WSPHUAWS. The current number of access shares in the water source is 4198 shares, whereas the total number of access shares in the Jerrys Water source at the commencement of the WSPHUAWS was 2573 shares. Additional trading in water access shares to the Jerrys water source is prohibited under Clause 71(2) (b) (ii) of the WSPHUAWS considering the total access shares within the water source.
323.	- Groundwater - Surface Water - Water Licensing	NOW	RA13	The definition of water take under Section 601 of the WMA, which commenced on 1 March 2013, includes relocating groundwater from one area of an aquifer to another area of the same aquifer. As such, the accounting relationships required for the Drayton South proposal require greater assurance that the applicant holds and will maintain adequate access shares from the Jerrys Water Source to account for the displacement and direct take of water from the surface and/or alluvium of Saddlers Creek than asserted in the Environmental Assessment.
324.	Surface Water	NOW	RA13	The security of supply of general security entitlement from the regulated Hunter River system carries an approximate 10% risk of available water determinations being reduced, to the extent that a potential impact

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				on the mining operation exists if inadequate account water is held. It is recommended this issue be considered in terms of drought contingency in the absence of market opportunities to obtain water on the temporary trading market in such climatic situations or high security entitlement in Zone 1 of the Hunter Regulated River.
325.	Surface Water	NOW	RA13	Water sharing options with BHP Mt Arthur Operations do not appear to have been fully considered, though off-site storage and transfer between the Bayswater 2 and 3 pits enhances the opportunities for such re-use of captured or intercepted water.
326.	- Rehabilitation - Groundwater - Final Landform	NOW	RA13	Operational and long term (post-mining) impacts upon the Saddlers Creek alluvium and river flows should be examined as to constraints and options for rehabilitation of the watercourse, and the need for and design of final voids in the post-mining landform.
				Water Supply The application relies upon catchment runoff capture as the primary water supply to the proposal. Water supply arrangements appear adequate to median or above-average rainfall years, as site runoff maintains a net surplus compared to dust suppression and rehabilitation water requirements. However, extended dry periods impose significant stress upon the water supply arrangements, which are only partially met from external supply from general security entitlements held in Zone 1 of the Hunter Regulated River water source. Water supply from the regulated Hunter River is limited, in that water shortage declarations, leading to reductions in available water to general security access licences are made by Available Water Determinations (AWD). To address this issue, the proponent will have to enter the temporary water trading market during these periods or acquire high security entitlement to cover these periods. However, the ability to obtain high security entitlement from both Zones 1 and 2 of the regulated river system is limited as the power generation and mining industries already control virtually all existing entitlements in Zones 1, 2 and 3 of the Hunter Regulated River.
327.	Surface Water	NOW	RA13	Anglo Drayton Operations should identify options in the event that an extended dry period or drought significantly impacts upon its ability to maintain adequate storage volumes to supply all demands for the project. It also should state that water shortage may impact upon production as a commercial risk to the

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				ongoing mining operation.
328.	- Groundwater - Water Licensing	NOW	RA13	Riverine Rehabilitation The severely degraded condition of Saddlers Creek downstream of the existing Drayton mine lease will impose difficulties in any rehabilitation of the condition of the watercourse. The loss of basal alluvial groundwater from the Jerrys (Saddlers Creek) water source not only requires access licensing accounting, but an approach to remediation of the watercourse which may require replenishment of alluvial groundwater connected to Saddlers Creek. The Office of Water recommends that a rehabilitation programme be required for Saddlers Creek, which adopts principles from the Anglo Coal Dartbrook riparian corridor programme. This may not be a suitable area to replant <i>Eucalyptus camaldulensis</i> due to the shallow and intermittent saturated alluvial system. However, other riparian species may be successfully established along the riparian corridor, which will form a higher quality connected surface and alluvial system, and allow post-mining landform options which are suitable to post-mining land use options in the Upper Hunter Valley. The Office of Water recommends the rehabilitation programme incorporate appropriate geomorphological frameworks, such as River Styles, to develop remediation options which are more effective into the post-mining period than has been used in the Hunter Valley previously.
329.	- Groundwater - Water Licensing	NOW	RA13	Groundwater Model - Predicted Groundwater Take and Drawdown Impacts A three-dimensional numerical groundwater flow model (MODFLOW SURFACT) was developed using hydrology, hydrogeology and geological structure data. A 13 year record of water level measurements was available for the monitoring bores located within the study area. A total of 95 water level sites were used to calibrate the steady state model. The ratio of RMS (12.15 m) to the total head change across the calibration points (174.9 m) indicated a SRMS of 6.95%. The industry standard SRMS typically varies between 5% and 10% for fractured rock models. A sensitivity analysis was undertaken to assess the model responses to variations in uncertain input parameters. A transient calibration of the Drayton South model was not undertaken. The undertaking of a transient calibration of the Project was considered not feasible for the following reasons: no metered groundwater extraction data available for the Hunter River alluvium located within.

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				the groundwater model domain, - no definitive assessment of river baseflow available for the Hunter River alluvium located within the groundwater model domain, and - the long-term groundwater level hydrographs available from the monitoring bores located within the study area show little temporal movement, providing little opportunity for calibration targets. The mass balance error, that is, the difference between calculated model inflows and outflows, at the completion of the calibration run expressed as a percentage of discrepancy, was close to zero, indicating good accuracy of the numerical solution and overall stability of the model. Seepage of groundwater from the aquifers intersected during mining will reduce groundwater pressures in the coal seams and overburden/interburden aquifers around the mining areas. The zone of influence for the shallow regolith/alluvium is predicted to be restricted to the immediate vicinity surrounding the mining areas. This is a maximum distance of approximately 600 metres to the west and south of the mining areas in Year 27. The zone of influence within the shallow regolith/alluvium is not predicted to extend into the Hunter River alluvial aquifer; however, it is predicted to extend marginally into the Saddlers Creek alluvium. A drawdown of up to 2 m is predicted to occur along a 6 km section of the Saddlers Creek alluvial aquifer as a result of cumulative impacts associated with the Project and the adjoining Mt Arthur Coal Mine operations to the north. This drawdown is within the Level 1 Minimal Impact Considerations of the Aquifer Interference Policy. The zone of influence for the Permian coal measures is predicted to be restricted to a maximum distance of approximately 1 kilometre to the west and south of the mining areas at Year 27 and extend under Saddlers Creek alluvium. The zone of influence within the coal measures is not predicted to extend beneath the Hunter River alluvium at the end of mining. The vertical leakage fluxes between the alluvial deposits associated with Saddlers Creek and the underlying coal measures will be affected due to the proximity of the Project. The pre-mining net upward seepage flux to the Saddlers Creek alluvium is in the order of 0.31 Megalitres per day. Operations at Mt Arthur Coal Mine are predicted to result in a maximum reduction in net flux to the Saddlers Creek alluvium of 0.19 Megalitres per day (at the end of mining). The remaining influx to the Saddlers Creek alluvium of approximately 0.12

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				Megalitres per day may therefore be reduced to zero as a result of the Project. The average reduction in flow from the bedrock to the Saddlers Creek alluvium is 58 ML/year. The model predicts that cumulative inflow of groundwater over the life of the mine is approximately 23,663 ML, which is an average of 876 ML/year over the 27 years of mining. Inflows into the mining areas will gradually increase from the commencement of mining in the Drayton South area to a maximum of 4.6 ML/day (1682 ML/year) in Year 10. The zone of drawdown influence within the shallow regolith/alluvium is not predicted to extend into the Hunter River alluvium; however, it is predicted to extend marginally into the Saddlers Creek alluvium. The zone of influence within the coal measures is not predicted to extend beneath the Hunter River alluvium at the end of mining. The predicted average annual groundwater take for different water sources is summarised in Table 1. Table 1: Predicted average annual groundwater take from various water sources.

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				Legislative Act	Water Sharing Plan	Water Source	Predicted average annual take (Ml/year)	Predicted average annual impact on water source (%)	Current licences	Licences/ Allocations Required
				Water Act	N/A	Permian Coal Measures	477	N/A	Nil	477 Ml/year
				WM Act	Hunter Unregulated and Alluvial Water Sources	Jerrys Water Source (Hunter River Alluvium)	2	0.08	Nil	2 Ml/year
						Jerrys Water Source (Saddlers Creek Alluvium)	58	2.25	Nil	58 Ml/year
					Hunter Regulated River Water Source	Management Zone 1	2	0.003	WAL 491 WAL 1066	2 Ml/year
				The hydraulic conductivity value of under 10m/day for the Hunter Alluvium appeared on the lower end but it is noted that there was a 50% increase in hydraulic conductivity values applied when undertaking the sensitivity analysis. The proponent has not estimated a maximum annual take of water for water sources other than the Permian Coal Measures, which means that the relevant range of statutory water licensing obligations, and risks associated with potential shortage of water supply for the proposal have not been fully assessed within the Environmental Assessment.						
330.	Water Licensing	NOW	RA13	Licensing The predicted water take is as shown in Table 1. It is noted the proponent has estimated the required licences and/or allocations based on the predicted average annual take. The NSW Office of Water advises						

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				that the risk associated with the take of water which may not be available by access trade within the water source is a commercial risk to the applicant. Taking water without holding adequate access shares or adequate water allocation held within its account is an offence under Sections 60A and 60C of the WMA. In relation to the Hunter Regulated River Water Source, Anglo American currently holds two general security Water Access Licences (WALs) (WAL 1066 and WAL 491), totalling 198 units for agricultural and domestic purposes. The proponent acknowledges a component of these Water Access Licences may be transferred from use for the purpose of irrigation to use for the purpose of mining to offset an annual average of 2 ML/year take from the Hunter Regulated River Water Source. The proponent is required to hold appropriate licences for each water source to account for the maximum predicted water take as part of its commercial risk with respect to the provisions of the Water Management Act 2000. In relation to the Hunter Unregulated and Alluvial Water Sources, the proponent acknowledges it will be necessary to purchase an entitlement of 60 ML/year, or seek this from an existing groundwater allocation to account for the average annual water take. However the proponent should be required to predict the maximum annual take of water and ensure that sufficient licensed entitlement is held to meet this demand from the commencement of the activity. As the number of current access licence shares in the Jerrys Water Source exceeds the schedule of access licence shares at the commencement of the WSPHJAWS by over 70%, the risk of over-allocation of the water source must be considered within the assessment for the project, as well as any other proposed aquifer interference activity within the Jerrys Water Source. The predicted take from the Permian coal measures will approach a maximum of about 900 ML/year (i.e. 28 Lis) in Year 10 with an annual average of 477ML. The proponent has made reference to licensing required under the Water Act for the take of this water only for the average annual take. The proponent should be required to hold sufficient licences to account for the predicted maximum annual take of 900ML/yr from the commencement of the activity.
331.	Groundwater	NOW	RA13	Aquifer Interference The groundwater assessment in the Environmental Assessment was completed prior to release of the NSW Aquifer Interference Policy (AI Policy) (released in September 2012). Consequently the Assessment only

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				makes reference to the Draft AI Policy. A total of two registered groundwater bores are located within the zone of influence (as defined by the 1 m drawdown contour. Both of these groundwater bores are located on land owned by Anglo American, and will be intercepted by mining. No other registered bores are located within the predicted zone of influence at the end of mining. The closest registered water bore located outside of the study area and not on land owned by Anglo American is GW049223. This bore is screened within the Permian Coal measures and is located approximately 1.3 km north of the Project. The Environmental Assessment would benefit from assessing the model drawdown impacts against the final AI Policy (2012). The drawdown predictions appear to be less than the AI Policy's Level 1 minimal impact considerations of 2 m at any neighbouring water supply work. However, further discussion is required against the minimal impact considerations. While there are no groundwater dependent ecosystems (GOEs) listed in the Schedule of the WSPHUAWS, it is likely that the two types of terrestrial GOEs identified in the Environmental Assessment are consistent with the Schedule of High Probability of GOEs included in Appendix 7 of the NSW Office of Water report Identification of high probability groundwater dependent ecosystems on the coastal plains of NSW and their ecological value July 2012. It would therefore be prudent for the Environmental Assessment to assess potential impacts on these GOEs against the considerations in the AI policy.
332.	Groundwater	NOW	RA13	Groundwater Monitoring and Reporting The groundwater monitoring network for Drayton South consists of 15 bores installed in the 1990s and early 2000s in the Permian formations, augmented by four new monitoring bore sites installed in 2011 along the alignments of Saddlers Creek and the Hunter River. The network also incorporates seven Vibrating Wire Piezometers (VWPs), most of which are located between the study area and the Hunter River. At each site, separate bores were constructed in the alluvial sediments and underlying coal measures. A total of nine new monitoring bores were installed at four sites situated between the Drayton South footprint. Saddlers Creek to the north and north-west, and the Hunter River in the south and south-east.

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				Groundwater levels are currently manually measured via groundwater monitoring bores on a quarterly basis. The current monitoring frequency is suitable for identification of long-term trends in groundwater levels. Pore pressures within the coal seams and interburden are automatically measured on a six-hourly basis by the VWPs. Automatic monitoring at six-hourly intervals is suitable for the identification of both short and long term trends in groundwater levels, and is particularly suited to capturing a response (if any) to rainfall events. It is proposed that water table trigger levels be determined for the bores monitoring the Hunter River and Saddlers Creek alluvial aquifers. The trigger levels will be set after a baseline data set of two years of water level data has been collected. The baseline monitoring period will allow the natural fluctuations in alluvial water levels due to variability in rainfall recharge and surface water flow to be assessed, and a method for separating mining induced water level fluctuations developed. The monitoring program will include the installation of monitoring bores in strategic locations to detect the movement of seepage water away from the emplacement areas. Water levels will be recorded on a quarterly basis. In addition groundwater samples will be collected and analysed on a six-monthly basis in accordance with the groundwater quality monitoring procedures noted above. This will enable direct comparison with groundwater samples collected from areas associated with the Project. Should the groundwater monitoring program surrounding the emplacement areas identify excessive seepage with water quality parameters exceeding guideline levels, interception or pump-back bores will be installed to avoid adverse impacts to receiving waters. Monitoring of pH and EC has been undertaken for all monitoring bores on a regular basis. The monitoring of these in-situ physico-chemical parameters occurred on about a twice yearly basis from 2000 until 2008, and then quarterly from 2009 until present. Groundwater samples will be collected from the existing groundwater monitoring bores on a six-monthly basis and analysed for pH, EC, TDS, major ions and trace elements. Monitoring will continue on a six-monthly basis until mine closure in Year 27 and then for a period of five years post closure. This will ensure that any deviation from the predictions made in the assessment can be identified and mitigated in a timely manner. Trigger levels for water quality will be developed only for the monitoring bores installed in the Hunter River and Saddlers Creek alluvial aquifers. A unique trigger for each bore will be required due to the variability in the groundwater quality in the alluvial aquifers. Trigger levels should be developed after a minimum of two years of baseline data has been collected.

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				Proposed data management and reporting includes: annual assessment of departures from identified monitoring data trends. If consecutive, six monthly monitoring campaigns exhibit departure from the established or predicted trend, then such departures should initiate a detailed review. This may include a need to conduct more intensive monitoring or to seek professional advice to compare against model predictions and/or instigate mitigative measures if the departures are attributed to the mining operation, formal review of depressurisation of coal measures and alluvial aquifers should be undertaken annually by a suitably qualified hydrogeologist. The validity of the model predictions should be reassessed every five years, and if the data indicate significant divergence from the model predictions, an updated or new groundwater model should be developed for simulation of mining. If future modelling predictions indicate losses from the alluvial water sources could exceed previous predictions and these losses are attributed to the mining operation, mitigation measures including purchase and retirement of existing water licences should be evaluated, and annual reporting (including all water level and water quality data) as part of the Annual Review. The groundwater monitoring and reporting program is satisfactory however it is requested the NSW Office of Water have the opportunity to review and endorse the proposed trigger levels.
333.	- Groundwater - Surface Water	NOW	RA13	Final Void and Land Use Overburden and most coal reject materials are expected to have very low oxidisable sulphur content and significant excess acid neutralising capacity. These characteristics indicate that the materials are non acid forming and likely to have a high factor of safety with respect to potential acid generation. At the completion of coal mining operations at Drayton Mine, three voids will remain. It is proposed that rejects and tailings generated from the Drayton South operation will be deposited in these voids, one of which will be utilised for water storage. There are three possible scenarios for rejects and tailings disposal; however, these are contingent upon reaching a commercial agreement with Macquarie Generation. The final void within the Drayton South area will collect and accumulate water from a number of sources. The post-mining equilibrium water level is predicted to reach RL 117 metres after approximately 1,000

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				years. The depression of the potentiometric surface around the final void will act as a 'sink', which prevents water from flowing outwards into the regional system. The freeboard between the water level surface and the void spill height is approximately 90 m. Under all scenarios for disposal of tailings in the East Void at Drayton Mine, the cone of depression will be retained and the water table within the void remains below the surrounding groundwater level, therefore it is unlikely that leachate will migrate out of the void. The tailings and reject disposal designs for the North Void do not provide conditions which will promote the development of a long-term cone of depression. This may lead to the movement of leachate away from the void and towards the catchment of Ramrod Creek. A revision of the existing Drayton Mine water management plan will be undertaken to encompass the new procedures and targets required for the Project to avoid impacting on groundwater and the receiving environment. This will include a groundwater monitoring program with a key focus on the management of leachate associated with the tailings and rejects. Given the length of time to reach post-mining equilibrium, the NSW Office of Water recommends that an appropriate volume of water access licences be retired to reflect the ongoing take of water. Verification of modelled drawdown extent and quantities
334.	Surface Water	NOW	RA13	Recommendations 1. Anglo American should identify water supply options in the event that an extended dry period or drought significantly impacts upon its ability to maintain adequate storage volumes to supply all demands for the project.
335.	Surface Water	NOW	RA13	2. Anglo American should also acknowledge that water shortages may impact upon production as a commercial risk to the ongoing mining operation.
336.	Water Licensing	NOW	RA13	3. Anglo American should be required to have adequate water supply authorities to all stages of the mining development, and if necessary, reduce the scale of its activity to match its water supply.
337.	Water Licensing	NOW	RA13	4. Anglo American should be required to hold all necessary access licence shares under the Water Management Act 2000 and water licences under Part 5 of the Water Act 1912, to account for the removal or diversion of water from any water source, or re-located within that water source, as required under s601 of the

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				Water Management Act 2000.
338.	Groundwater	NOW	RA13	5. Anglo American need to update the. Environmental Assessment as described below, to be consistent with the requirements NSW AI Policy (2012): - include an independent review of the groundwater model. - assess the model against the Australian Groundwater Modelling Guidelines 2012. - assess the predicted drawdown impacts against the minimal impact considerations in Tables 1 and 2 of the AI Policy. - include the calibration hydrographs in the Environmental Assessment Groundwater Assessment. - provide records of measured and inferred maximum annual take of water for each affected water source. - Anglo American should commit to address their licensing requirements for water take from all water sources. Provision of adequate methodologies to devise trigger levels within any Trigger Action Response Programme (TARP) in relation to alluvial drawdown, and impacts on flows within Saddlers Creek and groundwater dependent ecosystems within the drawdown envelope to the proposal. The NSW Office of Water will review the proposed monitoring trigger levels as part of the on-going groundwater management and reporting programme.
339.	- Groundwater - Rehabilitation	NOW	RA13	A rehabilitation programme should be developed for Saddlers Creek, incorporating appropriate geomorphological frameworks, and identification of suitable species for the re- establishment of a riparian corridor on Saddlers Creek in the reach affected by the Drayton South proposal. Consultation is requested with the NSW Office of Water to confirm the appropriate guidelines and frameworks to support the development of this programme. The following references will assist: A Rehabilitation Manual for Australian Streams. I Rutherford, K Jerie, N Marsh. Land and Water Australia. 2000 (2 vols.). Where Land Meets Water Resource Kit: a Guide to Riparian Management in the Hunter Valley. Hunter Central Rivers Catchment Management Authority, Tocal. 2007.
340.	Ecology	SEWPaC	RA14	As discussed yesterday the most important thing the proponent/consultant can do at this stage is run the

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				proposed white box grassy woodland offsets (ie the EPBC listed EC only) through the offsets calculator on our web site.
341.	Ecology	SEWPaC	RA14	Drayton Sth is going to the IESC at the end of the month and we will send you our comments when we receive their comments in February.
342.	Ecology	SEWPaC	RA14	We won't be making any further comments on biodiversity unless the proponent's offset calculations reveal a shortfall in the proposed offsets for EPBC purposes.
343.	Ecology	SEWPaC	RA14	An EPBC approval will not be finalised until the EPBC offsets have been sorted out.
344.	Land Ownership	Crown Lands	RA15	Crown Lands advise that there is both Crown land and Crown road within the project boundary that appear to be affected by the project. Crown land affected by the project needs to be fully identified and acquired by the proponent by way of an application sale under the Crown Lands Act 1989. The proponent will also need to seek approval from Crown Lands to undertake this process.
345.	Land Ownership	Crown Lands	RA15	Crown roads affected by the project will need to be either closed and purchased by the proponent or, if required to remain open, transferred to Muswellbrook Shire Council.
346.	General	Crown Lands	RA15	It is also noted that Table 17 (Licences and Approvals Required for the Project) in the Environmental Assessment refers to the Department of Lands as responsible for administering the Crown Lands Act 1989. This information is now out of date. The correct agency is Crown Lands, within the Department of Primary Industries (and to be referred to as NSW Trade & Investment-Crown Lands).
347.	Ecology	Fisheries NSW	RA16	Fisheries NSW advise there are no fisheries habitat issues as a result of the proposal.
348.	- Cumulative - Surface Water	IESC	RA17	The Committee was requested to provide advice on the Drayton South Coal Mine in NSW to the Commonwealth regulator at the environmental assessment stage. 1. The Committee notes that the proponent has provided an adequate site water balance for the project. However, the proponent has not provided a regional water balance and as such the cumulative water-related impacts of the proposed development cannot be evaluated. Notwithstanding this, the Committee considers

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				that the site specific impacts may be minimal.
349.	- Cumulative - Groundwater	IESC	RA17	2. The Committee notes that cumulative groundwater drawdown from the Mt Arthur and Drayton South coal mines is predicted to reduce groundwater flows to Saddlers Creek. In addition, the Committee recognises that surface water impacts would be caused by a reduction in catchment flows of 14 per cent or approximately 13 ML per year to Saddlers Creek, where flows are estimated to be approximately 90 ML per year under pre-mining conditions. The Committee notes that a reduction of flows would likely alter the geomorphic characteristics, habitats and ecological values of the creek.
350.	Surface Water	IESC	RA17	3. In order to ensure that the Hunter River is not further impacted by saline discharges, the Committee considers that it will be important to confirm the proponent's participation in the Hunter River Salinity Trading Scheme and confirm the capacity of the Scheme to cope with additional saline discharges within the catchment. It is noted that the potential impacts of heavy metals are not discussed in the documentation.
351.	Ecology	IESC	RA17	4. The Committee considers that the ecological impact assessment provided for the project to be thorough. The biodiversity offset strategy proposed by the proponent consists of onsite and offsite offsets. The Committee recommends that the regulator review the contribution of the offsets towards a representative water dependent ecosystem; noting that the current offset site is located 75 km north of the proposal and consists of different landform and ecosystem types.
352.	Ecology	IESC	RA17	5. The Committee notes that the proposal will remove approximately 180 ha of remnant <i>White Box</i> – <i>Yellow Box</i> – <i>Blakey's Red Gum</i> Grassy Woodland and Derived Native Grassland ecological community, which has the potential to cause ecosystem fragmentation and loss of connectivity within the project site. The Committee considers that remaining vegetation, such as groundwater dependent riparian vegetation and River Red Gum and River Oak communities associated with floodplains, would be placed under additional stress, making them more vulnerable when droughts occur.
353.	Ecology	IESC	RA17	6. The Committee notes that a reduction in catchment area and surface and groundwater flow is highly likely to adversely affect groundwater dependent riparian and floodplain vegetation and water dependent ecological communities. While the Green and Golden Bell Frog has not been located in field surveys, the Committee notes that the Hunter region is within the species' current distribution. The Committee suggests the

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				'biodiversity action plan' include a monitoring regime for the rehabilitation of ephemeral streams for likely impacts on water dependent ecosystems, including the Green and Golden Bell Frog.
354.	Ecology	IESC	RA17	7. The Committee suggests that the proponent consider further information relating to physical and ecological outcomes of the project. The Committee has asked the Office of Water Science to provide to the regulator specified references for suggested papers which look at these issues within the proposed mine area, and asked that they be passed to the proponent.
Special Interest Groups				
355.	- Agriculture - General - Human Health	LTGHR	SIG1	Lock The Gate – Hunter Region (LTGHR) is opposed to the proposed mine. We submit that the project cannot proceed without impacting heavily on community health, the environment, and important industries including horse studs, vineyards, and dairy farms. We submit that no amount of “conditions of approval” will change that, and that the Drayton South project must not be approved.
356.	- Agriculture - Air Quality - Blasting - Noise	LTGHR	SIG1	The project site is adjacent to seven thoroughbred horse studs, eleven dairies, four vineyards (3 with wineries), and an olive grove with processing plant. These industries will not be able to coexist with a 2000 hectare open cut coal mine next door. The impacts on air quality, and the noise and vibrations from both blasting and the daily operations of a large open cut mine, make coexistence between coal mines and these other industries impossible.
357.	Rehabilitation	LTGHR	SIG1	The large area proposed to be mined cannot be rehabilitated, contrary to industry claims. It has never been done.
358.	- Agriculture - Cumulative - Groundwater - Surface Water	LTGHR	SIG1	The Environmental Assessment fails to properly address the cumulative impacts on surface and groundwater quality and quantity from the mine proposal, and the impacts of this on agricultural industries.
359.	- Agriculture - Economics	LTGHR	SIG1	The economic analysis in the Agricultural Impact Assessment does not address the impacts on the neighbouring farms. The assessment is solely based on the site and the off-set site.
360.	Air Quality	LTGHR	SIG1	Air quality in Muswellbrook Shire is already heavily impacted by coal mining. Subscribers to the Upper Hunter

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				Air Quality Monitoring Program regularly receive warnings of high particulate levels in the area, and anecdotal evidence from Muswellbrook residents confirms that dust pollution from coal mines is already high, and should be reduced. Certainly, increases in dust pollution must not be allowed.
361.	Air Quality	LTGHR	SIG1	If the Drayton South Coal Project is approved, it will make the existing air quality problem in Muswellbrook worse. The proponent's response to the issue of particulate pollution is so poor, it is offensive. Pages 35 – 36 of Appendix F of their Environmental Assessment tabulates the EPA's best practise emission reduction measures for open cut coal mines, compared to the measures adopted by Anglo American. Of the 74 best practise measures, Anglo has adopted just 17.
362.	Human Health	LTGHR	SIG1	Clearly this company has no regard for the health of the people of Muswellbrook Shire.
363.	Ecology	LTGHR	SIG1	The proposed mine would impact heavily on biodiversity, through direct destruction of habitat. The 1928 hectare area proposed to be bulldozed is currently home to 19 threatened species listed under the NSW Threatened Species Conservation Act (TSC Act), 5 Endangered Ecological Communities listed under the TSC Act, 3 threatened species listed under the Commonwealth Environment Protection and Biodiversity Conservation Act (EPBC Act), and 4 Endangered Ecological Communities listed under the EPBC Act.
364.	Ecology	LTGHR	SIG1	Clearly this is a site of high biodiversity values, all of which would be destroyed were the mine approved. The proposal to "offset" this loss of biodiversity is inadequate. The "offset" property is in a different bioregion, with a different make up of species and ecological communities. In no way will it "offset" the loss of such a large area of habitat at Drayton South. The idea that destroying a large area of habitat in one area, and not-destroying habitat in another, unrelated area, can be presented as a "no net less" outcome for the environment, is self-evidently bogus and should be rejected.
365.	Greenhouse Gas	BZE	SIG2	I am writing on behalf of the not-for-profit climate change research and education organisation Beyond Zero Emissions to object to the proposed expansion of the Drayton South coal mine. Beyond Zero Emissions conducts research into how Australia can transition to a zero carbon nation within the next decade due to the pressing nature of anthropogenic climate change.
366.	Human Health	BZE	SIG2	Beyond Zero Emissions recently commissioned a report titled <i>Health and Social Harms of Coal Mining in</i>

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	Social			<i>Local Communities: Spotlight on the Hunter Region</i>, released in October 2012. The report was prepared by Ruth Colagiuri, Johanne Cochrane and Seham Girgis of the Health and Sustainability Unit at the University of Sydney. The report examines 50 peer-reviewed studies on the health and social impacts of coal mining and combustion on local communities around the world. It finds that there is clear evidence from the international health literature that living near coal mines or coal power stations causes serious harm to health. This harm ranges from excess deaths to increased rates of birth defects, cancer and heart lung and kidney disease, to increased respiratory ailments. And yet there are no primary studies addressing the health impacts of coal in Australia.
367.	- Greenhouse Gas - Climate Change	BZE	SIG2	Additionally, Beyond Zero Emissions published a report in July 2012 titled <i>Laggard to Leader: How Australia Can Lead the World to Zero Carbon Prosperity</i>. This report shows how Australia can influence the future direction of global efforts to stabilise the climate through curtailing the global supply of traded coal, making clean energy technologies cheaper, and developing a new model of international climate cooperation that promises to be more effective than the protracted UN negotiations. Furthermore, the report demonstrates how such actions serve the national interest – both raising the odds of securing a safe climate and establishing Australia as a leading force in global zero-carbon industries.
368.	- Human Health - Greenhouse Gas - Climate Change	BZE	SIG2	These two reports form the basis of Beyond Zero Emissions' objection to the proposed expansion of the Drayton South coal mine. Despite the hugely significant and avoidable health risks and ecological disaster associated with the use of fossil fuels such as coal there are at least 30 new coal mines and coal mine expansions planned for the NSW Hunter Valley region. These plans must not be implemented.
369.	- Human Health - Social - Greenhouse Gas - Climate Change	BZE	SIG2	Please find below a two-part argument against expanding the Drayton South mine. The first part outlines the health and social harms that may be caused by coal mining, while the second examines the close links between coal mining and climate change. These two parts combine to make a persuasive case to knock back the Drayton South proposal, based on the well being of local communities, the Australian national community and, ultimately, the global community. I respectfully ask that you register our objection to the proposed expansion of the Drayton South open cut mine and seriously consider these objections when considering the appropriateness of the proposal.
370.	Human Health	BZE	SIG2	The October 2012 report <i>Health and Social Harms of Coal Mining in Local Communities: Spotlight on the</i>

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	Social			<i>Hunter Region</i> by researchers from the Health and Sustainability Unit at the University of Sydney draws attention to the negative impacts of coal mining on local communities in Australia. This topic has to date been the subject of little scrutiny in this country, despite the significant evidence produced by international studies connecting coal extraction to various health and community problems. The creators of the report <i>Health and Social Harms of Coal Mining in Local Communities</i>, Colaguri et. al., aim to bring this important topic to bear on Australian political debate and decision-making.
371.	- Human Health - Social	BZE	SIG2	The report examines 50 peer-reviewed studies on the health and social impacts of coal mining and combustion on local communities around the world. It finds that there is clear evidence from the international health literature that living near coal mines or coal power stations causes serious harm to health and communities. Because of the findings of this report, Beyond Zero Emissions finds the proposal for the expansion of the Drayton South mine unacceptable. Please find a summary of these findings below.
372.	- Human Health - Social	BZE	SIG2	The report is structured around four research questions: 1) What specific diseases or other health problems are associated with coal mining in local communities? 2) Are there clusters of diseases or other health problems in the Hunter region of NSW? 3) Is social injustice associated with coal mining in local communities? 4) Is there an associated between coal mining and social injustice in the Hunter region of NSW? Below is a summary of the report's answers to these questions, excerpted from pp. iv-v:
373.	- Human Health - Social	BZE	SIG2	<i>Summary of key findings for Research Question 1 – Health harms</i> Adults in coal mining communities have been found to have: • Higher rates of mortality from lung cancer, chronic heart, respiratory and kidney diseases • Higher rates of cardiopulmonary disease, chronic obstructive pulmonary disease (COPD) and other lung diseases, hypertension, kidney disease, heart attack and stroke, and asthma • Increased probability of a hospitalisation for COPD (by 1% for each 1,462 tons of coal mined), and for hypertension (by 1% for each 1,873 tons of coal mined)

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				Poorer self-rated health and reduced quality of life
374.	Human Health	BZE	SIG2	Children and infants in coal mining communities have been found to have: - Increased respiratory symptoms including wheeze, cough and absence from school with respiratory symptoms although not all studies reported this effect - High blood levels of heavy metals such as lead and cadmium - Higher incidence of neural tube deficits, a high prevalence of any birth defect, and a greater chance of being of low birth weight (a risk factor for future obesity, diabetes and heart disease)
375.	Human Health	BZE	SIG2	Adults (and whole population) in communities near coal-fired power stations and coal combustion facilities have been found to have: - Increased risk of death from lung, laryngeal and bladder cancer - Increased risk of skin cancer (other than melanoma) - Increased asthma rates and respiratory symptoms
376.	Human Health	BZE	SIG2	Children, infants, and foetal outcomes in communities near coal-fired power stations and coal combustion facilities have been found to have - Oxidative deoxyribonucleic acid (DNA) damage - Higher rates of preterm birth, low birth weight, miscarriages and stillbirths - Impaired foetal and child growth and neurological development - Increased asthma rates and respiratory symptoms.
377.	Human Health	BZE	SIG2	<i>Summary of key findings for Research Question 2 – Disease clusters in the Hunter Region</i> No specific research studies were found to confirm or refute the existence of mining related disease clusters among residents of the Hunter Region, or their possible causes if they do exist. In the absence of such evidence, we reviewed two reports of routine health monitoring data from the Hunter Region from the NSW Health Department (now known as the NSW Ministry of Health). These reports showed mixed results. For example, the NSW Health Report (2010a) included the whole of the Hunter Region and suggested higher rates of deaths and illness in some areas for some health problems when compared with the rest of NSW.

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				However, the Bettering the Evaluation and Care of Health (BEACH) general [end p. iv] practice data for Singleton, Muswellbrook and Denman postcodes (NSW Health 2010b) did not demonstrate significantly higher rates of any problems managed, or medications prescribed or supplied, in general practice compared with the rest of non-metropolitan NSW.
378.	Social	BZE	SIG2	<i>Summary of key findings for Research Question 3 – Social injustice (other than in the Hunter Region)</i> For the purposes of this report, we defined social injustice as: 'the unequal or unfair social distribution of rewards, burdens, and opportunities for optimising life chances and outcomes'. This definition includes unfair imbalances in access to essential natural resources, opportunities for employment, education, political or social power and influence, and social or individual burdens such as financial costs, social or occupational disruption, and environmental damage.
379.	- Economics - Groundwater - Human Health - Social - Surface Water	BZE	SIG2	Aside from studies focussing explicitly on the Hunter Region of NSW which are discussed in the next section, six peer reviewed articles were identified from the US, the UK, Russia and (Queensland) Australia that directly addressed social injustices associated with coal mining. While there were limitations to these, a central theme of the impact on local communities was both real and perceived environmental degradation and injustices. We categorised the evidence for social injustice as: Environmental damage and perceptions of damage and health impacts - slurry (fly ash) spills - lack of community awareness of damage - distress resulting from concerns and uncertainties about the health impacts of mining-related pollution Water quality and human occupations (activities) - the impact of water pollution on securing safe water for drinking, producing food, swimming and fishing Social and economic costs - the cost of environmental damage to communities and society - inability of the community to capture economic benefits - social changes inhibiting the generation of alternative means of economic capital to mining - socio-demographic changes resulting in labour shortages in other industries; reduced access to and

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				affordability of accommodation; increased road traffic accidents - increased pressure on local emergency services - increases in criminal and other anti-social behaviours.
380.	- Air Quality - Cumulative - Groundwater - Social - Surface Water	BZE	SIG2	<i>Summary of key findings for Research Question 4 – Social injustice in the Hunter Region</i> Six peer-reviewed studies were identified on social aspects of mining in the Hunter Region. These studies detail a variety of impacts such as: - Social distress and environmental injustice including concerns over the cumulative health impacts of mining, social divisions and inequalities, feelings of loss and disempowerment, pollution/poor air quality, environmental damage and the potential to impact negatively on future generations - Asymmetry of power and influence including access to information, contestation over natural resources, and political conflicts of interest - Water access and rights including changes to the NSW water grading system favouring the coal mining industry - Failure to protect – specifically, the failure of government and the mining industry to exercise the precautionary principle and protect local communities from potential or actual harms.
381.	- Human Health - Social	BZE	SIG2	Conclusion The report <i>Health and Social Harms of Coal Mining in Local Communities: Spotlight on the Hunter Region</i> clearly demonstrates the need for more research on the impacts of coal mining in Australia. It draws attention to both the insufficient evidence to judge the medical and social safety of coal on the communities it is close to, as well as the mounting international evidence that coal extraction does indeed cause significant harm to individuals and societies. Given this evidence, it is at best unwise to expand coal mining, including in the case of the Drayton South mine.
382.	- Greenhouse Gas - Climate Change	BZE	SIG2	Coal mining is a significant contributor to the build-up of carbon emissions in the earth's atmosphere that is raising global temperatures and changing the earth's climate.
383.	Greenhouse Gas	BZE	SIG2	Beyond Zero Emissions published the first part of a plan to make Australia zero carbon within a decade, its

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	Climate Change			2010 report Zero Carbon Australia: Stationary Energy Plan. This report outlines the necessity of drastically cutting greenhouse gas emissions as soon as possible: “Current levels of greenhouse gases in the atmosphere are already sufficiently high to carry the climate system past significant tipping points. They pose an unacceptable risk of dangerous and irreversible changes to the world’s climate, to biodiversity, and therefore to human civilisation. These changes directly affect Australia’s food and water security, and increase the risk of regional instability. “Using a global carbon budget approach, recent work by the German advisory Council on Global Change demonstrates that, to have a two-in-three chance of keeping global warming to less than 2°C above pre- industrial temperatures, developed nations with the highest per capita rates of emissions, such as the United States and Australia, would need to decarbonise their economies by 2020. There is increasing consensus that the 2°C threshold is too high and beyond a ‘safe boundary,’ and that atmospheric carbon dioxide must be reduced from the current level of around 390 parts per million (ppm) into the range of 300 to 350 ppm” (p. xvi). These claims are supported by top climate scientists throughout the world.
384.	- Greenhouse Gas - Climate Change	BZE	SIG2	Many argue that Australia is only one country among many and thus cannot have a significant impact on global emissions. Beyond Zero Emissions argues that this does not excuse Australia from taking decisive action to reduce emissions as soon as possible in its 2012 report <i>Laggard to Leader: How Australia Can Lead the World to Zero Carbon Prosperity</i>. This report details how Australia can become a global leader in the effort to keep climate change to a minimum. One way of doing this, the report argues, is by leaving our coal in the ground instead of expanding such projects as the Drayton South coal mine. This will be explored further below.
385.	- Greenhouse Gas - Climate Change	BZE	SIG2	Summary of Laggard to Leader: How Australia Can Lead the World to Zero Carbon Prosperity International political will to combat the escalating threat of anthropogenic climate change is at a dangerously low level. Increasingly, national organisations as well as peak international organisations such as the International Energy Agency are warning us that “the door to a 2° trajectory is about to close” (cited in Green and Finighan 2012 p. vi).

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				As such, the transition to a zero carbon economy is of immediate concern, and effects every decision we make today, including the decision about the proposed expansion of the Drayton South mine. If all current plans for coal mine establishment and expansion (as well as gas expansion) in Australia are carried out, the nation would be responsible for more than 10% of greenhouse gas emissions globally by 2030, pushing the earth on it's trajectory to 2°C or more of warming.
386.	- Greenhouse Gas - Climate Change	BZE	SIG2	<i>Laggard to Leader</i> proposes that Australia lead the world in "Cooperative Decarbonisation," whereby each country will "phase down to zero or very near zero the greenhouse gas emissions associated with every economic and social process over which it has control or influence" (p. vi). This includes not only direct emissions, but emissions associated with exports and imports, such as Australia's coal.
387.	- Greenhouse Gas - Climate Change	BZE	SIG2	<i>Laggard to Leader</i> demonstrates one path toward a prosperous zero carbon Australia. Australia can be a forerunner in the global fossil fuel phase-out by placing a moratorium on new fossil fuel developments. This would place a strain on the global demand for fossil fuels and thus force world leaders into action. Australia would then lead the way in large-scale development of the wind and solar technologies that are so well suited to its environmental conditions. Decarbonisation is in Australia's interests not only because of the devastating effect continued warming will have, but also because it would position Australia as a world leader in zero carbon alternatives: "The technologies, products, processes, services, skills, knowledge and experience developed by Australian companies, researchers and governments in the process of decarbonising Australia's \$1.5 trillion economy will be extremely valuable in a world crying out for zero carbon solutions. Australia should aim to become the world's go-to country for zero-carbon products, zero-carbon services, zero-carbon finance and zero-carbon systems planning. The global benefit, in terms of facilitating emissions reductions overseas, of Australia's zero carbon ingenuity and experience would be considerable. And the benefit to Australia of capturing what HSBC is forecasting to be a multi-trillion dollar market by 2020 would be enormous" (p. 50).
388.	- Greenhouse Gas - Climate Change	BZE	SIG2	Conclusion The report <i>Laggard to Leader: How Australia Can Lead the World to Zero Carbon Prosperity</i> shows that it is both necessary and eminently possible for Australia to decarbonise in the near future. Australia will flourish

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				economically on the world stage by leading a global zero carbon movement. The threat of climate change leaves no room for the expansion of the fossil fuel industry, including such seemingly insignificant decisions such as the expansion of the Drayton South coal mine.
389.	- Human Health - Greenhouse Gas - Climate Change - Social	BZE	SIG2	Conclusion and Recommendation This submission opposes the proposed expansion of the Drayton South Coal Project on the grounds of the significant risks it poses to local communities, the Australian community and the global community. This submission has focussed on these risks in relation two major areas: 1) The health and social harms of coal mining; and 2) The relationship between coal mining and climate change
390.	- Human Health - Economics - Greenhouse Gas - Climate Change - Social	BZE	SIG2	<i>Health and social harms of coal mining</i> • It has been demonstrated that coal mining is associated with health and social harms. • Health issues range from excess deaths to increased rates of birth defects, cancer and heart lung and kidney disease, to increased respiratory ailments. • Social issues centre on the community economic, social and psychological costs of poor individual and environmental health, as well as the political and economic disempowerment suffered by local communities as they are subjected to the negative aspects of the mines while receiving little to no benefit from them. • There has not to date been sufficient research into the above impacts in Australia to make the expansion of the Drayton South mine worth the risks it may pose to local residents of the Hunter Valley region. <i>Coal mining and climate change</i> • Coal mining is a significant contributor to the impending threat of climate change. • Proposed expansions of the fossil fuel industry in Australia would make that the nation responsible for more than 10% of greenhouse gas emissions globally by 2030, pushing the earth on it's trajectory to a dangerous 2°C or more of warming. • Australia can be a world leader in combating climate change through "Cooperative Decarbonisation" by

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				insituting a moratorium on fossil fuels and instead building renewable energy infrastructure. This would benefit the nation economically by positioning it as a global go-to country for zero-carbon products, zero-carbon services, zero-carbon finance and zero-carbon systems planning. It is the recommendation of this submission that the Drayton South coal mine must not be expanded in order to preserve the health and prosperity of the Hunter Valley region, the Australian nation and the world.
391.	- Agriculture - Cumulative - Ecology - Groundwater - Human Health - Surface Water - Traffic and Transport	HCN	SIG3	The Hunter Communities Network (HCN) is an alliance of community based groups and individuals impacted by the current coal industry and concerned about the ongoing rapid expansion of coal and coal seam gas exploration and mining in the region. HCN is lodging an objection to the proposed Drayton South Coal Project because the Hunter Valley environment and communities who live in the region have reached saturation point from the cumulative impacts of open cut coal mining operations. The proposal to continue open cut operations up the Hunter River to the west of Jerry's Plains will cause cumulative impacts on surface and groundwater, community health, traffic movements, biodiversity and the viability of other industries adjacent to the proposal.
392.	- Agriculture - Equine Health	HCN	SIG3	HCN considers the effort taken in the environmental assessment report for the Drayton South project to prove that there will be no impact on neighbouring world class thoroughbred horse studs is a cynical exercise at best and misleading at worst. The proposed open cut mining operation will be conducted 24 hours a day, 7 days a week for 27 years. To compare this with the impact of transporting horses and claim that horses already live in dusty environments is a misinformed demonstration of compromised expertise.
393.	- Cumulative - Groundwater - Surface Water	HCN	SIG3	The Hunter River is already suffering from too much loss of base flow and surface flows through cumulative mining interception. The catchment already has too many final voids with many centuries worth of unmanageable impacts.
394.	Ecology	HCN	SIG3	Too much remnant vegetation has already been cleared from the valley floor removing too much habitat for threatened species with national environmental significance.

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395.	Agriculture	HCN	SIG3	Too many properties have already been purchased by the mining industry and sterilised from agricultural production.
396.	- Air Quality - Human Health	HCN	SIG3	Too much dust is now being generated across the region, as demonstrated by the regular high alerts measured by the Upper Hunter Air Quality Monitoring Network. The health of remaining communities in the valley is at severe risk.
397.	- Agriculture - Air Quality - Blasting - Economics - Noise	HCN	SIG3	The loss of a diverse agricultural economy in the region is at a tipping point with the Drayton South proposal. The possible loss of the neighbouring Coolmore and Woodlands world class thoroughbred horse studs will cause the Hunter's reputation to diminish. Other studs are likely to follow and the region will no longer be known as a centre of excellence for race horse breeding. The proximity of eleven dairy farms, four vineyards, three wineries and an olive farm with processing plant gives an indication of the diversity of economic opportunities at risk from this proposal. These industries employ local people from local communities and have a much longer lifespan than coal mining operations. These industries cannot operate sustainably in conditions of increased air pollution, noise and blasting impacts.
398.	Economics	HCN	SIG3	HCN is concerned that the economic assessment for the Drayton South project has been conducted by Gillespie Economics, the same consultant used to assess the Ashton South East Opencut, Warkworth Extension, Cobbora Coal project and many other mining proposals in NSW. This consultancy has been found to use out dated input-output modelling methods that are no longer used by the Australian Bureau of Statistics. These methods inflate the economic and job creation benefits of a mining project while discounting other considerable social and environmental costs.
399.	Traffic and Transport	HCN	SIG3	HCN is also concerned about the increased danger on local and regional roads through increased heavy vehicle movements and mine workers driving after 12 hour shifts. The mortality rate on the New England Highway caused by mine related traffic is now untenable.
400.	Cumulative	HCN	SIG3	The environmental assessment of the Drayton South Coal project has not adequately addressed the range of cumulative impacts that cannot be mitigated or offset. The lives of the remaining community members hanging on in the Upper Hunter are already severely

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				impacted by existing open cut mining operations. There is no suitable justification for these impacts to continue to increase. HCN calls on the NSW Government to reject this mining proposal on the grounds of unmanageable cumulative impact.
401.	Air Quality	HCEC	SIG 4	I write to object to the proposed Drayton South Coal Project. The proposed mine would contribute directly to elevated levels of particle pollution (PM10 and PM2.5). EPA monitoring in the vicinity of Muswellbrook routinely records PM10 levels between 40-50ugm-3. This level of particle pollution is already impacting adversely on community health in the Muswellbrook community. This standard was not adopted by the Commonwealth and state governments in order to facilitate approval of developments until this level of pollution is reached routinely, nor to guide the creation of 'sacrificial zones' where levels exceeding twice this level will be allowed. On the contrary, the intention of the NEPM is to maintain levels well below 50ugm-3 in order to protect community health.
402.	Air Quality	HCEC	SIG 4	Estimates of the proposed mine's contribution to ambient PM2.5 levels are interpreted against the NSW 'advisory reporting standard' of 25ugm-3 over 24 hours. It is important to note that the World Health Organisation recommended in 2005 three interim standards (or goals) for PM2.5. The most stringent of these is 15ugm-3 over 24 hours. This standard is appropriate in NSW (and Australia) as we are a developed nation. Hunter Valley communities expect a precautionary approach to air quality management. Adopting this stricter recommended standard would result in a very different assessment of the mine's impacts and necessary mitigation measures. The Senate Inquiry into health impacts of air quality and the National Action Plan on air quality are likely to move Australia closer to harmonisation with WHO recommended standards. It would be unwise to approve a coal mine that will routinely exceed these standards.
403.	Air Quality	HCEC	SIG 4	Anglo American Metallurgical Coal proposes very few air pollution mitigation measures. Having acknowledged the Donnelly et al 2011 report to the NSW EPA on Best Practice measures to prevent or minimise particulate emissions from coal mining, the proponents commit to 17 of 74 best practice mitigation measures (see Air Quality and Greenhouse Gas Impact Assessment Section 6, pages 35-36 - attached). In several instances, the proponent notes that these measures are being only partially implemented. What justification has been provided not to implement all 74 best practice measures?

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				The NSW Government should be acting decisively to reduce particle pollution in the Hunter Valley. Suspending approvals of new mines including this one until air quality is an appropriate short-term response.
404.	- Cumulative - Economics - Social	HEL	SIG5	HEL appreciates the opportunity to comment on the Drayton South open cut coal mine project (the proposal) and wishes to strongly object to the proposal because of the significance of its impacts. The proposal environmental assessment report (EA) identifies key areas of impact that will cause an untenable cumulative degradation of the environmental, social and economic values of the Upper Hunter. The proposal does not meet the principles of Environmentally Sustainable Development as gazetted in the Environmental Planning and Assessment Act 1979 and as such, should not be approved.
405.	Ecology	HEL	SIG5	The EA identifies that the proposal will destroy 1,928 hectares of vegetation including 107 hectares of the critically endangered ecological community, Box-Gum Woodland derived native grasses, and 398 hectares of native forest, woodland and shrubland.
406.	Ecology	HEL	SIG5	This area of clearing includes loss of six endangered vegetation communities listed for protection under the <i>NSW Threatened Species Conservation Act 1995</i> (TSCA) and the <i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC): 181 ha Central Hunter Box-Ironbark Woodland listed as endangered under TSCA 103 ha Derived Native Grassland – Upper Hunter White Box-Ironbark Grassy Woodland listed as endangered under TSCA and critically endangered under EPBC 98 ha Narrabeen Footslopes Slaty Box Woodland listed as vulnerable under TSCA 63 ha Upper Hunter White Box-Ironbark Grassy Woodland listed as endangered under TSCA and critically endangered under EPBC 11 ha Hunter Floodplain Red Gum Woodland listed as endangered under TSCA and critically endangered under EPBC 4 ha Derived Native Grassland – Hunter Floodplain Red Woodland Complex listed as endangered under TSCA and critically endangered under EPBC
407.	Ecology	HEL	SIG5	HEL does not support the proposed mitigation and offset measures for this significant loss of critically endangered vegetation communities.

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				The footprint of the proposed mine disturbance is on the floor of the Hunter Valley, adjacent to the Hunter River in the Sydney Basin bioregion. The proposed biodiversity offset property is 75km north, high in the Liverpool Ranges, in the Nandewar bioregion. There is little, if no similarity, between these two sites. The offset proposal does not mitigate the cumulative impacts on biodiversity in the mid reaches of the Hunter River catchment.
408.	- Cumulative - Ecology	HEL	SIG5	The EA identifies that combined with proposed mining authorizations in the vicinity of the proposal, cumulative impacts on vegetation in the area could result in the removal of 5,113 hectares of forest, woodland and derived grassland. This would include approximately 1,073 hectares of the critically endangered Box-Gum Woodland and 835 hectares of other communities listed for protection under TSCA. This level of cumulative impact is totally unacceptable, particularly under the circumstance that Office of Environment and Heritage are still undergoing a mapping process to identify existing approvals of biodiversity offsets for mining impacts in the Hunter region. The fact that Department of Planning and Infrastructure has no record of the cumulative impact of previous approvals for the removal of large areas of vegetation and threatened species habitat, or the condition or position of the approved offsets indicates to HEL that the planning process for large mining projects is not working. HEL recommends that the proposed loss of remnant vegetation should not be approved.
409.	Ecology	HEL	SIG5	The proposal will destroy habitat for five endangered plant species: - Weeping Myall (<i>Acacia pendula</i>) - River Red Gum (<i>Eucalyptus camaldulensis</i>) - Lobed Blue Grass (<i>Bothriochloa biloba</i>) - Tiger Orchid (<i>Cymbidium canaliculatum</i>) - Pink Donkey Orchid (<i>Diuris tricolor</i>) The proposal area supports a very high diversity of native flora with over 250 plant species recorded in the survey.
410.	Ecology	HEL	SIG5	The EA identifies that the remnant forest and woodland provides important fauna habitat features such as tree

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				hollows, blossom-producing trees and understorey vegetation. The area also provides grasslands, riparian and aquatic habitat and regenerating shrublands and forest. 115 bird species were recorded on site including thirteen threatened species. These included large hollow using forest owls, raptors, robins, treecreepers and honeyeaters. The federally protected Swift Parrot (<i>Lathamus discolor</i>) was recorded on the site and it is recognized that foraging habitat is also present for the endangered Regent Honeyeater (<i>Xanthomyza phrygia</i>). Eight endangered bat species, including the Large-eared Pied Bat (<i>Chalinobolus dwyeri</i>) and Greater Long-eared Bat (<i>Nyctophilus timoriensis</i>), listed for protection under EPBC, were recorded on site. These species are particularly threatened by loss of habitat through opencut mining approvals in the Upper Hunter and western coalfields areas.
411.	- Cumulative - Ecology	HEL	SIG5	The number of threatened flora and fauna records surveyed on the proposal site is an indication of its biodiversity significance in the region. These species are being impacted cumulatively with each new mine approval. HEL recommends that a full threatened species inventory of the Upper Hunter is required to gain a better understanding of the significance of remnant habitat availability.
412.	- Groundwater - Surface Water	HEL	SIG5	HEL objects to the proposal to permanently remove 10% of Saddlers Creek catchment and 4% of Saltwater Creek catchment. The combined impact of loss of base flows through groundwater interception and loss of surface flows will extend the ephemeral nature of the creeks and remove flows into the Hunter River system.
413.	Surface Water	HEL	SIG5	The EA identifies that during and after the life of the proposal, there is potential for the reduction of catchment flows to surrounding waterways, including the Hunter River, Saddlers Creek and Saltwater Creek. This is unacceptable.
414.	Surface Water	HEL	SIG5	Modelling has indicated that there is a 10% chance of an uncontrolled spill from the Rail Loop Dam. This is unacceptable.
415.	- Economics - Surface Water	HEL	SIG5	Modelling for onsite water storage has indicated significant issues with accumulation of water in out-of-pit storages. This could inhibit mining where active mining areas are required to be used for water storage. The economic impact of this event has not been assessed.

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416.	Groundwater	HEL	SIG5	HEL objects to the proposal causing an average annual loss of 2ML/year to the Hunter River alluvium and 58ML/year from the Saddlers Creek alluvium. This figure is inclusive of post mining losses. There is no indication how this water can be replaced, other than the proponent giving up access to water licences.
417.	Groundwater	HEL	SIG5	The EA also indicates that up to a 2m drawdown is predicted to occur along a 6km section of the Saddlers Creek alluvial aquifer as a result of cumulative impacts with adjoining Mt Arthur Coal Mine.
418.	- Final Landform - Surface Water	HEL	SIG5	HEL strongly objects to the proposal for a final void to be part of the post mining landform. This will result in another hyper saline lake left unattended in the landscape of the Upper Hunter region and is unacceptable.
419.	- Cumulative - Final Landform	HEL	SIG5	HEL recommends that Department of Planning and Infrastructure conduct an assessment of existing final voids and those approved for current mining operations in the Valley.
420.	Groundwater	HEL	SIG5	The cumulative impact of major groundwater drawdown over long periods of time has not been adequately assessed.
421.	Groundwater	HEL	SIG5	The EA identifies that the final void post-mining equilibrium level (approximately RL177 m) will be reached after approximately 1,000 years. This legacy over such a long time frame is totally unacceptable and impossible to regulate.
422.	- Greenhouse Gas - Climate Change	HEL	SIG5	The EA predicts that the proposal will produce an additional 0.31 million tonnes of CO ₂ equivalent per year for 27 years, including the mining, transportation of the coal to the Port of Newcastle and end usage of the coal. At a time when the impacts of climate change are now being felt throughout the global economy and efforts are being made to reduce carbon emissions, it is irresponsible for the NSW Government to continue to approve new coal mining proposals. This proposed increase in greenhouse gas production is not acceptable.
423.	Agriculture	HEL	SIG5	The EA does not adequately address the negative impacts the proposal will have on neighbouring properties and industries.
424.	- Air Quality - Cumulative	HEL	SIG5	The EA acknowledges that cumulative impacts on air quality cannot be predicted precisely and that exceedances will occur for both dust and noise levels. HEL objects to the limited consideration given to the impacts on the neighbouring thoroughbred horse studs

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	Noise			of a project that will operate 24 hours/day emitting noise, dust, heavy machinery vibrations and low frequency noise constantly. The high air pollution alerts occurring across the Upper Hunter Air Quality Monitoring Network is an indication that the current level of opencut mining activity in the region is already too great.
425.	Agriculture	HEL	SIG5	The impacts of this proposal on the diversity of industry in the vicinity have not been adequately assessed. These industries include seven thoroughbred horse studs including the world renowned Coolmore and Woodlands studs, eleven dairies, four vineyards including three with wineries and an olive grove with a processing plant.
426.	- Agriculture - Cumulative - Economics	HEL	SIG5	The Upper Hunter must be able to keep this mixed agricultural economy functioning into the long term. The impacts of large open cut mining operations have now reached saturation point and can no longer be adequately regulated for cumulative impact.
427.	Human Health	HEL	SIG5	The health risks for the community in the Hunter Region have now reached critical levels. There is no adequate justification for this proposal to be approved. The long term impacts will be a far greater cost to society than the short term gains of royalties.
428.	Economics	HEL	SIG5	HEL does not support the economic assessment for this proposal and believes that it vastly overstates the benefits while underplaying the extent of the long term negative economic impacts. HEL recommends that the Drayton South Coal Project not be approved.
429.	- Agriculture - Economics - Social - Tourism	HVWIA	SIG6	The Hunter Valley Wine Industry Association (HVWIA) is the peak body representing the interests of grape growers and winemakers of the Hunter Valley. The HVWIA is a member based organisation representing over 110 winemakers and grape growers of the Hunter Valley, and over 55 associate members. The Hunter Valley Wine Industry produces over 39 million litres of premium wine annually. This product is packaged and sold under Hunter Valley brands to over 50 countries worldwide, and throughout the domestic market. The value of the sale of this wine is estimated at over \$270 million per year with flow on effects of over \$230 million. There are 125 wineries and over 6,000 hectares of vineyard situated in the Hunter, which has been producing wine since 1830 and is Australia's oldest wine region. The Hunter Valley enjoys an international reputation for producing premium quality wines. The vineyards and

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
				wineries of the Hunter Valley provide significant employment opportunities and the flow on effects of wine tourism create economic, social and cultural benefits to the region. The HVWIA is committed to preserving the viticultural integrity of the Hunter Valley, and to providing a sustainable environment for our industry to prosper for future generations.
430.	Agriculture	HVWIA	SIG6	The HVWIA recognises the importance of the Upper Hunter as a vital contributor to the broader Hunter Valley Wine Region, providing large scale viticulture opportunities and future expansion potential for the wine industry. The Upper Hunter continues to make a significant contribution to the industry and it is important that the existing vineyards are preserved and can prosper for future generations. The HVWIA therefore strongly supports the Upper Hunter Winemakers objections to the Drayton South Open Cut Mine Proposal.
431.	- Economics - Social	MCCI	SIG7	The Drayton Mine, with its 530 workers, has been a major contributor to the economy of Muswellbrook since the mine opened in 1983. The Drayton South Coal Project presents an opportunity for that contribution to continue beyond 2017 and the Muswellbrook Chamber of Commerce & Industry supports the proposal.
432.	- Economics - Social	MCCI	SIG7	Based on the data presented in the Hansen Bailey Environmental Assessment as well as our own experience over the last 20 years, the Chamber identifies the following facts and understandings as the basis for our support – - Utilisation of the existing workforce for mining operations as well as the addition of 369 workers at the peak of the construction phase. - Utilisation of existing infrastructure and equipment fleet. - Minimal disruption of agricultural activities in the area with economic gains from the project far outweighing the loss of some agricultural production. However, any loss of agricultural production should be addressed by the proponent and consent authorities and should be kept to an absolute minimum. \$588 million in annual direct and indirect regional output or business turnover and 785 direct and indirect jobs in the Upper Hunter economy. - The reliance of many Muswellbrook businesses on the existing Drayton Mine with its high demand for engineering supplies and support services as well as the flow on effects in the retail, professional and

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				service sectors. - The absence of significant negative impacts on the environment, subject to the determinations of the relevant agencies and consent authorities. - At present values the Project is expected to return \$320 million in royalties to the NSW Government. - Continuation of an existing operation imposes less demand on public infrastructure when compared to a 'green field' project. However, Chamber relies on Muswellbrook Shire Council to determine a realistic contribution to local infrastructure under a Voluntary Planning Agreement with Drayton Coal. Chamber also trusts that Federal and State Infrastructure needs will be addressed by those authorities and that appropriate provision is made in their future budgets.
433.	General	MCCI	SIG7	On behalf of the Muswellbrook business community, the Muswellbrook Chamber of Commerce and Industry 'supports and encourages business enterprise in Muswellbrook and its districts'. Our support for this project is consistent with our Charter and recognises our reliance on the coal mining industry, particularly in our local area. Drayton Coal is an important and respected member of the Muswellbrook business community and enjoys the Chambers support. The Muswellbrook Chamber of Commerce & Industry would welcome the opportunity to answer any questions or expand on this submission if required.
434.	General	NCC	SIG8	NCC is the peak environment body for New South Wales, representing over 100 organizations across the state. We have long-standing experience in state environmental assessment and planning and are extremely concerned with the proposal to develop the Drayton South coal project in the Upper Hunter.
435.	Cumulative	NCC	SIG8	This large open cut mining proposal will have a cumulative impact far greater than identified in the environmental assessment report.
436.	- Agriculture - Cumulative - Ecology - Greenhouse Gas	NCC	SIG8	NCC objects to this proposed expansion of open cut coal mining in the southwest area of the Upper Hunter region because of unacceptable cumulative impacts on the following environmental, social and economic assets: Biodiversity, particularly the critically endangered Box-Gum Woodland derived native grasses and native forest, woodland and shrub land that provide important habitat values;

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	- Climate Change - Groundwater - Surface Water			2. Hunter River, Saddlers Creek and Saltwater Creek; 3. Groundwater and dependent ecosystems; 4. Adjoining industries, particularly the thoroughbred horse studs and also the dairies, wineries and olives growers; 5. Increased greenhouse gas emissions of 0.31 million tonnes of CO2 equivalent per year for 27 years.
437.	- Cumulative - Final Landform - Groundwater - Surface Water	NCC	SIG8	NCC strongly objects to the proposed post mining final void that is predicted to take approximately 1,000 years to reach an equilibrium water level of Reduced Level 117 metres. This is an inappropriate final mine landform and does not take into account the cumulative impact of final voids across the Hunter River catchment area.
438.	Ecology	NCC	SIG8	NCC objects to the proposed biodiversity offset property that occurs in the Nandewar bioregion over 70kms north of the proposed destruction of critically endangered matters of national environmental significance within the Sydney Basin bioregion.
439.	Ecology	NCC	SIG8	NCC objects to the proposed destruction of 1,928 hectares of vegetation including 107 hectares of Box-Gum Woodland derived native grasses and 398 hectares of native forest, woodland and shrubland. The project will impact on six endangered vegetation communities, five endangered plant species, thirteen endangered bird species and eight endangered bat species.
440.	- Cumulative - Ecology	NCC	SIG8	The environmental assessment identifies that the cumulative impact of vegetation removal associated with nearby mining operations and proposals could result in the removal of 5,113 hectares of forest, woodland and derived grassland. However, there is no assessment of the cumulative impact on loss of habitat for fauna and flora species recorded within these areas.
441.	- Cumulative - Groundwater - Surface Water	NCC	SIG8	NCC objects to the proposed permanent loss of 10% of Saddlers Creek catchment and 4% of Saltwater Creek catchment. The combined impact on alluvial groundwater systems, loss of catchment and cumulative impact of existing operations on flows to the Hunter River has not been adequately assessed.
442.	- Groundwater - Surface Water	NCC	SIG8	NCC calls on the Department of Planning and Infrastructure to conduct a comprehensive regional water study with NSW Office of Water to ascertain the current level of impact of open cut and longwall mining on the

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				groundwater and surface water systems in the Hunter region.
443.	- Air Quality - Noise	NCC	SIG8	The environmental assessment predicts that air quality and noise exceedances will occur during the operation of this mine. This environmental pollution will impact on neighbouring properties and industries.
444.	- Agriculture - Social - Economics	NCC	SIG8	NCC does not believe that adequate assessment of social and economic impacts have been conducted in relation to other industries that contribute to a mixed economy in the Hunter Valley.
445.	Economics	NCC	SIG8	NCC also notes that the economic assessment has been conducted by Gillespie Economics, the same consultancy used for most coal mining project in NSW. It has been noted in submissions for previous mining proposals that this consultant uses out of date modelling processes to overstate a project's impacts on economic activity and employment. NCC rejects the economic significance of the Drayton South coal project as assessed.
446.	- Greenhouse Gas - Climate Change	NCC	SIG8	The Drayton coal project will generate new greenhouse gas emissions directly conflicting with State and Federal policies to reduce climate change. There is overwhelming scientific evidence that the burning of fossil fuels directly contributes to climate change. Australia is already from the impacts of a warming climate including, increased floods, droughts and heat waves. The argument for continued coal-fired electricity in comparison to the long-term investment in renewable energy sources has not been adequately investigated.
447.	Cumulative	NCC	SIG8	NCC is of the opinion that the cumulative impact of the proposed Drayton South Coal project is significant and recommends that this project not be approved.
448.	General	SEH	SIG9	The Scone Equine Health Hospital appreciates the opportunity to comment on Anglo American's Drayton South Coal Project. Our submission provides information on our business, its place in the regional community, our dependence on the Hunter Valley's thoroughbred breeding industry and our significant concerns about, and opposition to, Anglo American's Drayton South Coal Project.
449.	General	SEH	SIG9	As this submission is one of the first that the Scone Equine Hospital has made we note that the documents place on exhibition for six weeks were difficult to download from the web (due to the size of individual parts)

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				and extended to many volumes totally over 4,000 pages of technical data. For the average landholder affected by this proposal it is a mammoth task to download the documents let alone navigate through the various highly technical reports, digest them and make a submission. A period of six weeks, before Christmas and during the busiest period for our business and many in the thoroughbred breeding and agricultural landholders and businesses – particularly given mining companies have had years and much technical expertise to prepare them.
450.	General	SEH	SIG9	We would strongly recommend that landholders and communities are given more time to respond to future mining proposals of this complexity (including appropriate time to commission their own expert advice if that is their choice). We would particularly suggest that they are not rushed out prior to Christmas or other major public holidays, a practice which diminishes community confidence in the process and for which the previous Government was renowned.
451.	General	SEH	SIG9	The Scone Equine Hospital is a local business with a world class reputation. It is the largest veterinary practice in Australia, and indeed the Southern Hemisphere. We employ over 100 people (5 specialists, 30 veterinarians, 70 support staff) in a practice that in itself is recognised as a world class centre of equine health and research excellence. We have a proud history of over fifty years history servicing our clients in Scone and the Upper Hunter. We provide veterinary care for the second largest horse population in the world, the Hunter Valley's thoroughbred breeding industry. As a result of our specialist and world recognised work in the Hunter Valley, we also provide veterinary referral services across Australia's eastern seaboard and internationally.
452.	General	SEH	SIG9	The Scone Equine Hospital has strong research relationships with leading universities in Australia and around the world and is sought after to field veterinary specialist and expert advice and speakers at national and international conferences.
453.	Social	SEH	SIG9	In addition to our veterinary care, we provide practical training for 40 veterinary students and 60 veterinary nurses each year. In the Upper Hunter region, we are a large employer of professionals and skilled workers. Our staff and their families are long term residents and proud contributors to our local communities. Our practice sponsors and supports over fifty community groups and organizations and is a sponsor of major horse related events in the

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				Upper Hunter.
454.	- Agriculture - Economics - Social	SEH	SIG9	<u>Our Future - Inextricably linked to the Thoroughbred Breeding Industry</u> The Scone Equine Hospital has substantial plans to invest and grow. These plans include: - building a State-of-the-Art Veterinary Hospital (an investment of \$8-10 million resulting in construction and ongoing operational employment opportunities); - increasing the equine-related training and research opportunities available in the local area; - investing in diagnostic equipment and infrastructure to draw horses and horse people to the area and enhance Scone's reputation as the Horse Capital; and - expanding and increasing our support of local horse organizations and events. However our future is tied inextricably with the future of the Hunter Valley's multibillion dollar thoroughbred breeding industry. 90% of our business depends on the Thoroughbred industry. If the Thoroughbred industry does not exist in the Upper Hunter, our practice does not exist.
455.	- Agriculture - Economics - Social - Tourism	SEH	SIG9	For some years now our investment plans have been on hold as the future of the Hunter's thoroughbred breeding industry remains uncertain. Decades of bad planning decisions and the issuance of exploration licences for individual mining projects that have the potential to devastate an entire industry have forced us to put on hold our investment in the region. This uncertainty is having a negative effect on investment and the future of our industry. The Hunter Valley's thoroughbred breeding industry, its critical mass and the benefits that flow from it, including to the network of support industries like our own, cannot be replicated or relocated as a whole. Mining and Gas extraction are relatively short term activities; they take the resources and move on. The Thoroughbred industry has been a sustainable land use for over 150 years and counting. The Scone Equine Hospital firmly believes that the Hunter Valley's horse industry is a major, sustainable contributor to the economy and the amenity of the area. The Hunter Valley is recognised as the "Horse Capital" of Australia - a brand that has been developed over 150 years on a clean and green image which in turn attracts investment, industry, tourism and residents to the area.
456.	Agriculture	SEH	SIG9	The cumulative effects of mining and resource extraction in the rest of the Hunter have pushed the area to a

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	- Cumulative - Economics - Social			tipping point which if allowed to further expand will destroy the Thoroughbred industry here and cause the area to lose its international identity and reputation.
457.	- Agriculture - Social - Economics - Visual	SEH	SIG9	The Scone Equine Hospital has serious concerns about, and is opposed to, the Drayton South Coal Project. <i>"The thoroughbred industry in the Upper Hunter Valley is a very significant contributor to the regional, state and national economies and a major source of employment. The structure of the industry makes it particularly vulnerable to threats based on image and the introduction of coal mining in the Upper Hunter Valley is strongly identified as such as threat. The available evidence supports the view that open-cut coal mining and a viable international scale thoroughbred breeding enterprise are incompatible land uses."</i> The Scone Equine Hospital acknowledges and supports the conclusions of the Bickham Planning Assessment Commission relating to the vulnerability of the equine industry to threats based on image (including reputation and visual amenity) and the incompatibility of open cut coal mines and viable international scale thoroughbred breeding enterprises.
458.	Agriculture	SEH	SIG9	The Drayton South Coal Project is immediately opposite two of the Hunter Valley's largest, international scale thoroughbred breeding studs. It is inconceivable that any reasonable assessment of the impact of this mining project would conclude that it would not have an impact on the thoroughbred breeding industry. Yet the Agricultural Impact Statement supporting Anglo American's proposal states that <i>"the Project will not reduce the availability of land for agricultural purposes of existing agricultural land within the immediate locality, including land utilised by the equine industry cluster within the locality. As such, this has not been discussed further in the assessment"</i>.
459.	Agriculture	SEH	SIG9	It is hard to understand how a project of such close proximity to world scale thoroughbred breeding operations can conclude that it will not affect existing agricultural land and productivity. This is completely at odds with previous expert PAC conclusions and the conclusions of any reasonable person who is familiar with the thoroughbred breeding industry.
460.	Agriculture	SEH	SIG9	At best this conclusion demonstrates a lack of understanding of the thoroughbred breeding industry and what is at stake. At worst it is an oversimplification aimed at skewing the socio-economic results in Anglo

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
	- Economics - Social			American's favour. Either way it is deficient in its analysis and the company should be required to re-submit a pertinent and better informed socio-economic analysis and agricultural impact statement that more accurately reflects the impacts of this project on the thoroughbred breeding industry, investor confidence, loss of employment, the impact on the network of industries that rely on it and the impact to the community (and the NSW economy) if as a result of this project the thoroughbred breeding industry's critical mass was fractured and the industry was diminished or destroyed.
461.	- Air Quality - Cumulative - Human Health	SEH	SIG9	The Scone Equine Hospital recognises that the science regarding the environmental and human health effects of coal mining and coal seam gas extraction is currently inadequate. This proposal does not address the cumulative impacts (both air quality and health effects) of mining in the region. Recent research conducted by the University of Sydney has raised serious concerns on the human health effects and social impacts of coal mining on communities -issues that are particularly relevant to communities in the Hunter Valley. As the University of Sydney research notes the Hunter Valley has more than 30 mostly open cut coal mines and six active coal-fired power stations. The University of Sydney's international, peer reviewed, research has highlighted the serious health impacts for communities living near coal mines and coal combusting power stations.
462.	Human Health	SEH	SIG9	Human health problems identified by this research include children and infants with impaired growth, neurological development, high blood levels of heavy metals, higher prevalence of birth defects, and greater chance of low birth weight which is also a risk factor for future obesity, diabetes and heart disease. Adults have been shown to have higher rates of death from lung cancer and chronic heart, respiratory and kidney disease. There are also chances of developing other cancers and hypertension. Some studies have also shown higher rates of miscarriages and stillbirths. This research reveals highly alarming results, results that should be seriously tested through a human health study in the Hunter Valley. There is a duty of care that this Government has to the Hunter Valley communities and the research conducted by the Sydney University cannot and should not be ignored.
463.	Human Health	SEH	SIG9	In this respect, we recommend that this project, which is in such close proximity to not only thoroughbred breeding studs but the hundreds of people that live on those studs, should submit a cumulative health study including all mining operations in the region and the cumulative impacts health of mining resulting from this

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				project.
464.	Equine Health	SEH	SIG9	In our view the equine health impacts report misunderstands or oversimplifies the potential impacts of mining operations on horses. There is little international research that simulates comparable circumstances to those in the Hunter Valley.
465.	Equine Health	SEH	SIG9	Extraneous light is a potential environmental issue for breeding equines and light of sufficient strength and duration could affect breeding cycles.
466.	- Air Quality - Equine Health	SEH	SIG9	The report fails to appropriately address young foal's susceptibility to dust of all types. Further, there is limited research on the susceptibility of young foals to dust, even in paddock situations.
467.	- Noise - Blasting - Equine Health	SEH	SIG9	On noise and vibration, the report's assumptions that horses become "desensitised over time" fails to recognise the nature of stud farm operations and the fluidity of the equine breeding population on those stud farms.
468.	Equine Health	SEH	SIG9	There is a well-accepted scientific maxim that "The absence of evidence is not evidence of absence". We believe that when it comes to the effects of coal mining activities on equine health there is simply not sufficient research or information to allow the proponent to suggest that there will be no deleterious effects on equine health.
469.	Traffic and Transport	SEH	SIG9	Safety and the degree of saturation of road traffic is of concern to us both as citizens with concern for human safety on the roads and as veterinarians who use key roads, such as Edderton Road and the Golden Highway, effectively as equine ambulance routes during the breeding season (August to December each year). Any additional pressures, closures, congestion on key roads will raise serious risks to both people and horses.
470.	- Agriculture - Regulatory and Planning Context	SEH	SIG9	The Drayton South Coal Project is the first test of the Government's new policies and processes since it was elected. It is also the first test of whether the Government will deliver on its commitment to protect Australia's iconic Thoroughbred Breeding industry in the Hunter Valley. The decision on this project will signal to our industry and other equine support industries that are located in the Hunter Valley to support the thoroughbred breeding industry, whether the Government processes really

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
				work and whether the Government will protect our industry. The decision on this mining project will signal whether we have a future in the Hunter Valley or not. The Bickham PAC clearly indicated that open cut coal mines and international scale thoroughbred breeding operations are incompatible land uses. We have the opportunity and responsibility to protect an area and an industry which is unique in Australia and the world. We trust that the Government will recognise that this mining proposal, across the road from two of Australia's leading horst studs is clearly an incompatible land use and reject the Drayton South coal mining proposal.
471.	- Agriculture - Economics - Social - Tourism	UHWA	SIG10	The Upper Hunter Winemakers Association represents the interests of Grape growers and Winemakers of the Upper Hunter Valley. The Upper Hunter has a long history in the Wine Industry and is an important economic, sustainable contributor to the region. The area's vineyards and wineries provide significant employment opportunities and the flow on effects of wine tourism create economic, social and cultural benefits to the region. These proposed mines will directly affect some of our individual members and have the potential to seriously impact on the future viability of our industry in this region. The UHWA is therefore opposed to the Drayton South open cut mine proposal.
472.	- Agriculture - Economics - Social - Tourism	UHWA	SIG10	Impacts on the Wine Industry - The proposed mine will directly impact one of the Upper Hunter's key vineyards, Hollydene (previously Arrowfield Wines) and knock on effect will damage the reputation of the Upper Hunter Wine Industry as a whole. The wine and tourism industries need a critical mass to survive and the removal of some of our more prominent vineyards impacts on the viability of the industry and the credibility of this area as a serious wine region. There are numerous tourism development proposals (including projects at Two Rivers, Hollydene and Cruikshanks) that are constrained by current levels of uncertainty created by existing and proposed mining developments. The proposed mine will have a serious impact on the future viability of our industry, which has been already seriously impacted by the rapid expansion of the mining industry in recent years.
473.	- Air Quality - Cumulative	UHWA	SIG10	Cumulative Impacts - The Upper Hunter is already a very large coal producer with a high concentration of coal mines in the area. We do not believe that the cumulative impacts of mining in the Upper Hunter have been fully considered. This mine proposal will further impact on the areas dust and noise pollution, leading to

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	- Human Health - Noise - Traffic and Transport			further deterioration of the local environment. Large vehicular traffic and rail movements will also be dramatically increased. These impacts will also affect the health and wellbeing of the local communities.
474.	Agriculture	UHWA	SIG10	The agricultural impact assessment does not address the impacts on neighbouring farms or land uses within the area. This is a serious deficiency which needs to be corrected.
475.	- Agriculture - Economics - Social	UHWA	SIG10	Loss of Diversity - This development will result in the significant loss of agricultural land and a reduction in the agricultural diversity of the area. Our region boasts some of the world's best thoroughbred studs, wineries and a vibrant agricultural sector which enjoys secure access to irrigation water and some of the most fertile land in the country. All of these industries contribute to the prosperity of our community and if the dominance of mining in this area is not brought into some sort of balance, we risk losing these industries to this area for ever.
476.	Agriculture	UHWA	SIG10	Critical Industry Clusters - This proposed mine is within the Critical Industry Cluster area for the viticulture and thoroughbred industries as defined in the Upper Hunter Strategic Land Use Plan. If this mine is allowed to proceed it will undermine this document and make a mockery of the entire land use planning process.
477.	- Agriculture - Economics - Social	UHWA	SIG10	Socio Economic Impacts – We are dismayed that the socio economic assessment does not take into account the impacts on thoroughbred and wine industries. Apart from being misleading this assessment is totally deficient by assuming no impact on alternative agricultural activities. It seriously overestimates the next economic benefits to the state from this project. The company should be forced to resubmit its socio economic analysis to include sensible assumptions about the impact this project will have on other land uses and sustainable agricultural industries in the area.
478.	- Air Quality - Human Health	UHWA	SIG10	Air Quality impact – As landholders and concerned citizens we are seriously concerned about the impact of dust from this mine to the overall health and air quality of our region. In this respect, we strongly request that a cumulative air quality and health impact assessment resulting from this project and other existing mining operations before a decision is taken regarding this project.
479.	Agriculture	UHWA	SIG10	Visual impact - The Drayton South mine is located at the gateway to the Upper Hunter wine region and

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	- Tourism - Visual			directly opposite an existing vineyard/winery operation (Hollydene Vineyard) where significant tourism investment is planned and being undertaken. As much as the mining industry would like to believe that mining and wine tourism can co-exist, that is certainly not the view of the wine tourism industry.
480.	- Agriculture - Groundwater - Surface Water	UHWA	SIG10	Water Resources - The Hunter River is the lifeblood of the Viticulture industry in the Upper Hunter. Any industry that threatens or pollutes and damages this supply of water will threaten the future viability and reputation of the industry. We are not confident that appropriate attention has been paid to this aspect in the environmental assessment.
481.	General	UHWA	SIG10	As the body that represents the interests of grape growers and winemakers of the Upper Hunter, all of the above points are serious issues our industry. Our reputation in the Upper Hunter rests on a "clean, green" image. This mine, so close to wine and thoroughbred operations, is the kind of project that should be rejected by the Government. I respectfully ask that you register my objection to this proposal and seriously consider my objections when assessing the appropriateness of the Drayton South open cut coal Proposal.
482.	- Air Quality - Cumulative	WS	SIG11	The Wilderness Society Newcastle objects to the Drayton South Coal Project. There are serious cumulative impacts of yet another coal mine in the Upper Hunter for dust and usability of the valley.
483.	Ecology	WS	SIG11	This mine will also result in yet another significant patch over 100 ha of critically endangered box gum woodland derived native grasses cleared for coal mining. The proposed offsets for this destruction are completely inadequate, are in another bioregion all together, and appear to ignore the management plan for this species on the brink of extinction. In total, the project will destroy 1,928 ha of bushland, including 107 ha critically endangered Box-Gum Woodland derived native grasses and 398 ha native forest, woodland and shrubland.
484.	- Greenhouse Gas - Climate Change	WS	SIG11	The extraction of 119 million tonnes of coal over the life of the project will contribute significantly to the climate change impacts and are in complete contradiction to the international measures to mitigate climate change and encourage low emission energy production in the coming decades.
485.	Ecology	WS	SIG11	The project will also impact on the Hunter River, Saddlers Creek and Saltwater Creek and will negatively

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	- Groundwater - Surface Water			affect the Red Gum and River Oak groundwater dependent ecosystems in the project area.
486.	General	CFMEU	SIG12	On 4 March 2011 Anglo American Metallurgical Coal Pty Ltd applied to the Minister, Department of Planning seeking approval for the continuation of the existing Drayton Mine through the extraction of coal by both open cut and highwall mining operations in the Drayton South areas. The Director General made the Environmental Assessment publicly available on the 7 November 2012 at the DP&I Information Centre Sydney, Muswellbrook Shire Council and Nature Conservation Council. The Union is pleased to take the opportunity to comment on the Drayton South Coal Project and related activities Environmental Assessment. The Mining and Energy Division is a Division of the CFMEU under the Federal Workplace Relations Act 1996, with over 120,000 members, one of the largest in Australia. The Division covers several industries including the coal industry, coal ports, metalliferous mining industries, electrical power generation, oil and gas and the Nation's small coking industry. The Northern District Branch of the CFMEU Mining and Energy Division, being the branch that on behalf of the organisation which is making the submission is the principal Union representing coal miners in the Northern District coalfields of New South Wales. The operations is located approximately 10 kilometres north-west of the village of Jerry's Plains and approximately 13 kilometres south of Muswellbrook is wholly within the State's Northern District coalfields. The Union is familiar with the Drayton facility site and has engaged the services of an Environmental Consultant with extensive experience in local government and environmental assessments on coal mining related projects. The Project involves: - The continuation of operations at Drayton Mine as presently approved with minor additional mining areas within the East, North and South Pits; - The development of an open cut and highwall mining operation extracting up to 7Mpa of ROM coal over a period of 27 years within the Drayton South area; The utilisation of the existing Drayton Mine equipment
487.	General	CFMEU	SIG12	
488.	General	CFMEU	SIG12	

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				fleet with the addition of a highwall miner and coal haulage fleet; - The continuation of the existing workforce of up to 530 employees and contractors; - The use of Drayton Mine's final landform voids for rejects and tailings disposal and water storage; - The utilisation of the existing Drayton Mine infrastructure including the Coal Handling and Preparation Plant, rail loop and associated loading infrastructure, workshops, bath houses and administration offices; - The construction of a transport corridor between the Drayton South mining area and the existing Drayton Mine; - The continued utilisation of the Antiene Rail Spur off the Main Northern Railway to transport product coal to the Port of Newcastle for export; - The realignment of a section of Edderton Road; and - The installation of further water management and power reticulation infrastructure to support mining in the Drayton South area. A contractor based workforce of approximately 369 personnel will be required during the peak construction phase. Following construction within the Drayton South area, there will be a period when mining will occur at the existing approved Drayton Mine and within the Drayton South area concurrently as mining activities are transitioned. During this period, personnel and equipment will be progressively transferred from Drayton Mine to the Drayton South area. This will continue until mining operations are completed at Drayton Mine. Once a new Project Approval is granted for the Drayton Complex, the existing approval for Drayton Mine and the Antiene Rail Spur will be surrendered.
489.	Stakeholder Consultation	CFMEU	SIG12	Stakeholder Engagement The stakeholder engagement program included consultation with local, State and Commonwealth government agencies, neighbouring land owners and industries, and the Aboriginal and wider local community. A number of briefings and presentations have been provided to government agencies throughout the preparation of the Environmental Assessment including a Planning Focus Meeting which was held on 1 June

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				2011. Such consultation efforts according to the proponent have provided regulators with an understanding of the Project, some of the key findings from the technical studies and an overview of community stakeholder issues raised. Project briefings were offered to neighbouring landowners and the wider local community via telephone, email and community newsletters. The proponent details that during the planning phase and preparation of the EA, 10 community stakeholders including Coolmore Australia and Darley Australia, accepted the opportunity to be briefed on the Project.
490.	Stakeholder Consultation	CFMEU	SIG12	Several working groups have been established with neighbouring enterprises and industries, including Coolmore Australia, Darley Australia, Mt Arthur Coal Mine and Macquarie Generation to address key issues and interactions, and to further develop cooperative landowner relationships. These working groups have facilitated ongoing communication between parties and provided stakeholders with the opportunity to input into the planning of the Project and the preparation of the EA. Following completion of the issue scoping phase, responses were provided for all issues raised by stakeholders in relation to the Project. Strategies for the management and mitigation of these issues were developed. Where possible, specific issues raised in relation to the Project were addressed with the relevant stakeholders. A risk assessment was undertaken to identify potential environmental and social issues associated with the Project. The purpose of the risk assessment process was to prioritise and focus the required environmental assessments for the Project in consideration of the Director-General's Environmental Assessment Requirements and the findings from stakeholder engagement.
491.	Air Quality	CFMEU	SIG12	An air quality impact assessment was undertaken by consultants PAE Holmes. The purpose of the assessment in part was to predict the Project's air quality impacts, including dust, on receivers in the vicinity of the existing Drayton Mine and Drayton South area, and to recommend measures to mitigate and manage these impacts. To assess the effect that dust emissions will have on existing air quality, the dispersion model predictions from the indicative worst case modelled years start and end of year 3, 5, 10, 15, 20 and 27 have been compared with relevant air quality criteria. Several iterations of mine plans were modelled throughout the

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				planning phase to incorporate all reasonable and feasible measures for the Project in order to reduce environmental and social impacts.
492.	- Air Quality - Cumulative	CFMEU	SIG12	The results from the dispersion modelling indicate that the Project is predicted to contribute to some exceedances of the relevant criteria for cumulative annual average PM ₁₀ and TSP matter at one receiver. The same receiver is also predicted to experience exceedances of the relevant criteria for 24-hour average PM ₁₀ from the Project alone for up to 23 days in a modelled year.
493.	Air Quality	CFMEU	SIG12	Minor exceedances of the relevant criteria for 24-hour average PM ₁₀ from the Project alone have also been predicted for another two receivers although the exceedances are only predicted for one day each of the modelled Years 10 and 15. These maximum impacts predicted for the 24-hour average PM ₁₀ represent the Project's operations under adverse prevailing weather conditions. It is expected that the proactive management of operations would allow effective modifications to activities so that these impacts would not be experienced by receivers.
494.	- Air Quality - Cumulative	CFMEU	SIG12	Cumulative modelling for 24-hour average PM ₁₀ was undertaken using a Monte Carlo Simulation for Year 10 as this modelled year has the largest predicted impacts for the Project alone. The results show that nine private receivers are predicted to experience exceedances of the assessment criterion (50 µg/m ³) while one private receiver is predicted to experience an exceedance of the acquisition criteria (150 µg/m ³) over the life of the Project.
495.	- Air Quality - Cumulative	CFMEU	SIG12	It is noted that the actual number of exceedances per year both as a result of the Project alone and cumulatively cannot be predicted precisely and will depend on actual Project activities, weather conditions, implementation of real time controls and predictive meteorological forecasting and background levels in the future. It is expected that the proactive management of operations would allow effective modifications to activities so that these impacts would not be experienced at the suggested receivers.
496.	Air Quality	CFMEU	SIG12	No exceedances of the relevant criteria have been predicted at all other private receivers including those in the vicinity of the existing Drayton Mine. Air quality management and mitigation practices will be implemented to ensure that the Project does not exceed the relevant criteria at all other privately owned receivers.

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497.	Air Quality	CFMEU	SIG12	The proponent will revise the existing Drayton mine air quality management plan to include construction and operation of the Project. The revised air quality management plan will incorporate leading practice dust minimisation management measures. The proponent also details it will develop a leading practice air quality monitoring network surrounding the Drayton Complex in consultation with neighbouring landowners. This will include a real time meteorological monitoring station with predictive software capabilities and a network of real time air quality monitors.
498.	Greenhouse Gas	CFMEU	SIG12	PAE Holmes completed a greenhouse gas impact assessment for the Project. The main sources of greenhouse gas emissions from the Project include: - Electricity consumption; - Fugitive emissions of carbon dioxide and methane; - Diesel usage; - Explosive usage; and the transport and end use of the product coal The emissions estimated to result from the Project will not individually have any significant impact on global warming. According to the proponent applying the principles of Ecological Sustainable Development, it is considered that there will be no increase in measurable impact on climate change as a result of the Project. It is noted that Anglo American will implement all feasible and reasonable measures onsite to minimise the greenhouse gas emissions of the Project and ensure it is energy efficient.
499.	Noise	CFMEU	SIG12	An acoustics impact assessment was undertaken by Bridges Acoustics in order to predict the Project's noise impacts and receivers in the vicinity of the Drayton Complex, and to recommend measures to mitigate and manage these impacts.
500.	Noise	CFMEU	SIG12	Predicted noise levels for the Project were modelled at sensitive receivers for indicative worst case scenarios for Year 3 start and end, 5,10,15,20 and 27. These representative years were identified as the periods most likely to contain the worst case noise levels. The operations modelled in these years included coal mining activities, coal handling and processing, and coal loading and transportation along the Antiene Rail Spur. Additional model scenarios were used to determine construction and sleep disturbance noise levels to ensure these issues were comprehensively assessed. An analysis was undertaken to investigate various noise

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				management measures to be applied to the Project which showed that those measures proposed in the EA were feasible and reasonable.
501.	• Noise	CFMEU	SIG12	The Project is situated in close proximity to a number of existing coal mining and power generation operations, industrial background noise levels for the Antiene area which have previously been measured for the purposes of EA's associated with the Mt Arthur Coal Mine and the existing Drayton Mine.
502.	• Noise	CFMEU	SIG12	A long term noise survey (unattended) was conducted between 10 and 20 June 2011 to measure background noise levels for Drayton South area receivers. A short term noise survey (attended) was undertaken to supplement the findings of the long term noise survey. This survey was conducted at the same locations as the long term noise survey and consisted of a series of noise measurements over 15 minute periods.
503.	• Noise	CFMEU	SIG12	Receivers surrounding the Drayton Complex were divided into two groups being the Drayton Mine receivers (located to the north) and the Drayton South area receivers (located to the south). No receivers are predicted to experience significant noise levels of 5 dBA above the intrusive criteria as a result of the Project. Further to this there are no exceedances of the intrusive criteria for any Drayton South area receivers.
504.	• Noise	CFMEU	SIG12	If the predicted operational noise level exceeds the intrusive criteria by 2 to 5 dBA, the receiver is deemed to experience moderate noise impacts. There are seven Drayton Mine receivers (390,398,401,402,403,411 and 418) that will experience moderate noise impacts at residences. There are a further four Drayton Mine receivers (382, 419, 420 and 421) that will be subject to moderate noise impacts over an area greater than 25% of the property, however, lesser impacts are anticipated at residences.
505.	• Noise	CFMEU	SIG12	A receiver is deemed to experience a mild noise impact if the intrusive criteria are exceeded by less than 2 dBA. There are nine Drayton Mine receivers (399, 400, 419, 420, 421, 423, 424 and 425) that will experience mild noise impacts at residences and one receiver (386) that will experience mild noise impacts over an area greater than 25% of the property. Five of these receivers (399, 400, 423, 424 and 425) will also be subject to moderate noise impacts over an area greater than 25% of the property.
506.	• Noise	CFMEU	SIG12	Predicted noise levels will generally be slightly lower than the predicted noise levels reported in the Drayton Mine Extension EA for Drayton Mine receivers, as additional noise control measures have been proposed

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				since the 2007 EA was prepared and subsequently included in the noise modelling for the Project.
507.	• Noise	CFMEU	SIG12	The predicted construction noise levels will not exceed the day time intrusive criteria adopted for Drayton Mine receivers. However, it will exceed the night time criteria in the absence of noise mitigation measures and impact on a number of Drayton Mine receivers. This exceedance is primarily associated with upgrades to the Coal Handling and Preparation Plant. As such the existing Drayton Mine noise management plan will be revised to incorporate construction noise criteria and controls during the Coal Handling and Preparation Plant upgrade activities to ensure the relevant criteria is not exceeded.
508.	• Noise	CFMEU	SIG12	Similarly, the predicted construction noise levels will not exceed the day time intrusive criteria adopted for Drayton South area receivers with the exception to residences at receivers 240 and 250. Intermittent exceedances of the criteria at receivers 240 and 250 are predominantly associated with the construction of the Edderton Road realignment. Construction noise levels of 35 to 40 dBA will be experienced by these receivers during an approximate three month period.
509.	• Noise	CFMEU	SIG12	Construction noise associated with the Edderton Road realignment is not likely to be unacceptable as this work will only be undertaken during the day. This noise will be masked to a certain extent by traffic noise on the Golden Highway and the existing Edderton Road.
510.	• Noise	CFMEU	SIG12	The proponent will revise the existing Drayton mine noise management plan for the Project. Ongoing monitoring will be also undertaken to confirm the predicted noise levels of the assessment. This will include the establishment of real-time noise monitoring at representative receiver areas surrounding the "Drayton Complex" to enable ongoing noise management.
511.	• Blasting	CFMEU	SIG12	An acoustics impact assessment was undertaken by Bridges Acoustics. The purpose of this assessment was to predict the Project's blasting impacts on receivers in the vicinity of the Drayton South area, and to recommend measures to mitigate and manage those impacts.
512.	• Blasting	CFMEU	SIG12	The Project is likely to require an average of up to five blast events per week during daylight hours to prepare overburden for removal and for coal recovery. The assessment found that blasting associated with the Project is predicted to produce ground vibration and overpressure levels well below the relevant amenity criteria at all privately owned residences and structures

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				with the exception of receiver 226 where it is predicted that the relevant criteria would be exceeded if the Maximum Instantaneous Charge is above 500 kilograms.
513.	Blasting	CFMEU	SIG12	The proponent will update the existing blasting management plan to include appropriate management and mitigation measures to ensure that the relevant criteria are met for all privately owned residences, heritage structures and infrastructure.
514.	Visual	CFMEU	SIG12	A visual impact assessment was undertaken by JVP Visual Planning and Design. The purpose of the assessment was to define the character of the surrounding landscape, assess the visual impacts of the Project and recommend measures to mitigate and manage these impacts. This included an assessment against the gateway criteria contained within the Strategic Regional Land Use Plan (SRLUP) to determine whether the Project would lead to a significant impact on either the Equine or Viticulture Critical Industry Cluster.
515.	Visual	CFMEU	SIG12	The assessment concluded that the visual impact on surrounding receivers will be limited for the majority of the mine life. This is because the operational areas of the Project have been designed to remain behind existing topography in order to conceal them from views at the most sensitive locations to the south.
516.	Visual	CFMEU	SIG12	The exception is the views that will be available to the Houston visual bund while it is being constructed. The Houston visual bund is required to ensure that longer term views to the operational areas of the Project are screened from view. Receivers located to the south of the Project including residences within Jerrys Plains, part of Coolmore Stud and motorists on the Golden Highway would experience a view of the Houston visual bund while it is being constructed. During this time (estimated to be 16 months) the visual impacts for these areas would be high. These impacts would be reduced as rehabilitation is completed. This is likely to be no more than three to five months following completion of the final stage lift of construction. After this, the visual impact will be reduced to moderate and then low for the remainder of the Project reflecting decreasing visual effect levels.
517.	Visual	CFMEU	SIG12	The majority of lighting utilised at a mine site is associated with the Coal Handling and Preparation Plant, workshops and load out infrastructure, all of which are located at the existing Drayton Mine. Lighting impacts within the Drayton South area will predominantly be caused by lights fitted to mobile equipment operative outside of active mining areas. In most cases, direct light effects will be limited as a result of existing

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				topography and vegetation.
518.	Visual	CFMEU	SIG12	Since the dominant sources of light are located at the existing Drayton Mine, mobile equipment operating within the Drayton South area will not significantly increase the overall diffused light effect.
519.	Visual	CFMEU	SIG12	The proponent details numerous mitigation measures which have been incorporated into the design and operating plans for the Project that will reduce the visual effect and mitigate the visual impact of the Project on sensitive viewing locations. The proponent will also conduct ongoing consultation with stakeholders surrounding the site over the life of the Project. Should any issues arise in relation to visual impacts on surrounding sensitive viewing locations; these will be addressed through consultation with the relevant parties.
520.	Ecology	CFMEU	SIG12	An ecology impact assessment was undertaken by Cumberland Ecology Pty Ltd. The biodiversity at Drayton Mine and within the Drayton South area and its surrounding areas have been extensively surveyed to support various project applications for mining and conservation projects. The assessment included a detailed desktop review of previous studies and a comprehensive field study of the Drayton South area and associated areas within Drayton Mine.
521.	Ecology	CFMEU	SIG12	A high proportion of the Drayton South area is dominated by extensive areas of native perennial grassland of various diversity and floristic composition that has been derived from the clearing of the original woodland and forest communities. Remnant forest and woodland exist as scattered patches particularly along riparian corridors and in steeper areas across the Drayton South area. The majority of the remnant forest and woodland within the Drayton South area is dominated by Eucalyptus moluccana (Grey Box), which conforms to the Central Hunter Box-ironbark Woodland. The remainder of the area is occupied by smaller patches of other threatened and non-threatened communities.
522.	Ecology	CFMEU	SIG12	More than 175 fauna species were recorded within the Drayton South area. A large proportion of the recorded species are represented by avifauna and micro bats, which are highly mobile. Conversely reptiles, arboreal mammals and terrestrial mammals do not possess the ability to disperse as freely and as such are not well represented.
523.	Ecology	CFMEU	SIG12	The Project will result in the disturbance of 1 928 hectares of vegetation, including 107 hectares of Box-Gum

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				woodland derived native grassland and 389 hectares of other native forest, woodland and shrub land, progressively over 27 years. It is unlikely to result in significant or long term adverse impacts to Saddlers Creek, the Hunter River or the wider catchment.
524.	Ecology	CFMEU	SIG12	The proponent will develop and implement a biodiversity action plan, which will form a component of the existing Drayton Mine flora and fauna management plan. The plan will guide all facets of biodiversity management and mitigation for the Project, including staged disturbance, restoration and rehabilitation activities.
525.	Ecology	CFMEU	SIG12	As a component of the ecology impact assessment, a biodiversity offset strategy was developed in association with the proponent to compensate for the loss of Box-Gum Woodland and other native vegetation as a result of the Project. The strategy consists of two main components, onsite offsets and offsite offsets, which work together to ensure that the best compensatory outcomes are achieved with the most efficient utilisation of resources and to meet State and Commonwealth offsetting requirements. The onsite offsets for the Project include: - Conservation: Retention of 85ha of existing Central Hunter Box-Ironbark Woodland (EEC) and Cooba Scrub along the primary ridgeline immediately south of the Drayton South disturbance footprint; - Rehabilitation: Establish rehabilitated communities of Central Hunter Box-Ironbark Woodland (EEC) and Narrabeen Foot slopes Slaty Box Woodland (v) on the Drayton South disturbance footprint; and - Restoration: Maintain and improve 24ha of existing vegetation that is situated within the immediate vicinity of Saddlers Creek and restore an additional 62 ha of Hunter Floodplain Red Gum Woodland (CEEC) through planting efforts. The onsite offset component of the biodiversity offset strategy will concentrate on restoration and conservation efforts on available land within the Project Boundary as a priority. The onsite offsets have been developed to maximise opportunities for conservation, rehabilitation and restoration in site. However, there is little opportunity to expand on Drayton Mine's current offsetting commitments, including the Drayton Wildlife Refuge. With the assistance of consultants, the proponent have identified and secured an offsite biodiversity offset property to ensure that the Project will not result in a net loss in biodiversity. Offsite offsets include the investigation of potential offsite offsets to compensate for the

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				residual ecological impacts of the Project.
526.	Aboriginal Heritage	CFMEU	SIG12	An Aboriginal archaeological and cultural heritage impact assessment was undertaken by AECOM. The archaeological resource within the Project Boundary is comprised of 208 previously recorded sites as per the AHIMS database. Of these sites located within the Project Boundary, 85 sites are situated within the study area. In addition to the previously recorded Aboriginal Heritage Information Management sites, 160 new archaeological sites were identified and recorded within the study area. As a result of the Project, a total of 175 archaeological sites will be directly impacted. To manage these impacts the existing Drayton Mine Aboriginal and Cultural Heritage Management Plan will be revised in consultation with registered Aboriginal stakeholders. The revised plan will include detailed salvage methodologies to be carried out prior to commencement of the Project and protection and conservation of archaeological sites that are not impacted by the Project.
527.	Non-Aboriginal Heritage	CFMEU	SIG12	A non-Aboriginal heritage impact assessment was undertaken by AECOM Australia. A total of 10 non-Aboriginal heritage items were identified within and adjacent to the Drayton South area, including five items listed on the heritage inventories (Plashett Homestead, Edderton Homestead, Arrowfield Cottage, Strowan Homestead and Woodlands Homestead).
528.	Non-Aboriginal Heritage	CFMEU	SIG12	The development of the Project will result in direct and indirect impacts on certain heritage items identified. The fence and Nissan hut with stockyard is situated within the Drayton South disturbance footprint and will be directly impacted and removed by mining activities and construction of associated infrastructure.
529.	- Blasting - Non-Aboriginal Heritage	CFMEU	SIG12	Ground vibrations and overpressure associated with blasting have the potential to impact the structural integrity of the other listed heritage items. Findings from the acoustics impact assessment undertaken by Bridges Acoustics concluded that the blast vibration and overpressure generated by the Project will not exceed the recommended criteria at any of these heritage items.
530.	- Non-Aboriginal Heritage - Visual	CFMEU	SIG12	The construction of the Project, including the Houston visual bund, Overburden Emplacement Areas, rehabilitation areas and tree screenings, will modify the existing visual environment and potentially the visual aesthetics of the landscape surrounding certain heritage items.
531.	Non-Aboriginal	CFMEU	SIG12	Due to the proximity of Edderton and Bowfield Homesteads these locations will experience high visual

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	Heritage Visual			impacts during the early stages of the Project. From Year 10 and for the remainder of the Project life, the visual impact will be reduced to moderate and then low, with the northern extent of the OEAs rehabilitated and mining advancing further south.
532.	Non-Aboriginal Heritage Visual	CFMEU	SIG12	For Strowan Homestead and Arrowfield Cottage views will be available to the construction of the Houston visual bund during its 16 month construction period. For this period there will be a high visual impact at these locations. The visual impacts will be reduced to moderate and then low as progressive rehabilitation is completed and the bund is integrated with the surrounding landscape. Of the heritage items identified, the stockyard, Woodlands Homestead and Randwick Homestead will avoid being directly or indirectly impacted by the Project.
533.	Surface Water	CFMEU	SIG12	A surface water impact assessment was undertaken by WRM Water & Environment. The existing Drayton Mine is located in the upper headwaters of Ramrod Creek, Bayswater Creek, Saddlers Creek and Saltwater Creek.
534.	Surface Water	CFMEU	SIG12	A computer-based simulation model was used to assess the dynamics of the water balance under varying rainfall and catchment conditions. The model was configured to simulate the operations of all major components in the water management system including both the existing components at Drayton Mine and those proposed to be constructed at Drayton South as part of the Project.
535.	Surface Water	CFMEU	SIG12	The main features of the proposed water management system include: - Continued utilisation of the existing water management system and infrastructure at Drayton Mine; - Removal of the existing mine-water Industrial Dam to allow for additional mining in the East Pit. It is proposed to shift the current functions of the Industrial Dam to the Access Road Dam. Any water remaining in the Industrial Dam at the time of decommissioning will be pumped to other storage, in particular the South Void; - The construction of two new mine water dams within the Drayton South area (Transfer Dam and Houston Dam). An additional mine water dam (ROM Dam) will be constructed should the conveyor option be adopted for the haulage of coal from the Drayton South area to the existing Drayton Mine CHPP; - Highwall dams and drains to collect runoff from undisturbed areas and divert it around the disturbed area.

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				Blakefield Dam, will be constructed to manage the release of the clean highwall dam water into Saddlers Creek; - Water collected in the active mining areas within the Drayton South area will be pumped to the Transfer Dam or approved water storages at Drayton Mine and used at the CHPP for dust suppression; - Rejects and tailings from the CHPP are proposed to be co-disposed in the North Void under the base case; - Runoff from OEAs that has not come in contact with coal or carbonaceous material will be collected in sediment dams. This water will be released to the downstream environment after a period of settlement or pumped into the water management system for reuse; and - A water supply and discharge pipeline to the Hunter River, which will be linked to the Houston Dam. Water in excess of shite use will be released directly to the Hunter River under the Hunter River Salinity Trading Scheme to allow controlled discharge of mine affected water.
536.	Surface Water	CFMEU	SIG12	The modelling suggests that there is a 50% chance that releases will exceed 740 ML per year on average and a 10% chance they will exceed 1 140 ML per year on average. Average released per release day will be between 25 to 31 ML.
537.	Surface Water	CFMEU	SIG12	The surface water impact assessment concluded that by implementing an effective water management system as proposed, the Project will not impact on the quality of receiver water or on the adjoining Plashett Dam.
538.	Surface Water	CFMEU	SIG12	The Project will reduce the Saddlers Creek catchment by up to 14% and the Saltwater Creek catchment will reduce by 11% over the life of the Project. At the completion of mining, the proposed Blakefield, Houston and Transfer Dams will be removed and the final void catchments will be minimised in order to restore catchment resulting in a total 10% and 4% loss of catchment area of Saddlers Creek and Saltwater Creek respectively.
539.	- Rehabilitation - Surface Water	CFMEU	SIG12	To mitigate the impact of the loss of catchment flows, a comprehensive rehabilitation program is proposed for Saddlers Creek including an extensive restoration program.
540.	Surface Water	CFMEU	SIG12	The Saltwater Creek channel is already highly modified as a result of Plashett Dam. The loss of additional catchment resulting from the construction of Houston Dam is not expected to have a significant impact on

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				Saltwater Creek.
541.	Surface Water	CFMEU	SIG12	The Project will have an insignificant impact on the Hunter River flows. Under mining conditions, the Project will reduce the catchment draining to the Hunter River at Liddell by a maximum of 0.14%.
542.	Surface Water	CFMEU	SIG12	The proponent indicates a revision of the existing Drayton Mine water management system and management plan will be undertaken to encompass the new components, procedures and target required for the Project. This will include monitoring program for onsite water sources.
543.	Groundwater	CFMEU	SIG12	A groundwater impact assessment was undertaken by Australasian Groundwater and Environmental Consultants. The groundwater modelling exercise simulated the existing conditions of the groundwater regime and provided predictions of the potential impacts of future mining activities.
544.	Groundwater	CFMEU	SIG12	The regional groundwater system within the vicinity of the Drayton South area consists broadly of three aquifer systems including: - Alluvium along the Hunter River, Saddlers Creek and Saltwater Creek; - Weathered bedrock; and - The coal seams of the Permian Wittingham Coal Measures.
545.	Groundwater	CFMEU	SIG12	The groundwater model predicts that inflows will vary throughout the mine life, which is directly related to the design of the mine plan. As mining progresses and enters into a new strip groundwater inflows will rise, followed by a gradual reduction in inflows.
546.	Groundwater	CFMEU	SIG12	Inflows into the mining areas will gradually increase from the commencement of mining in the Drayton South area to a maximum of 4.6ML/day in Year 10. The inflow rate over the life of the Project averages 477 ML/year. In Year 10 it is anticipated that close to 900 ML/year will be derived from the Permian aquifers, whilst the remainder is a result of rainfall recharge and seepage through the overburden.
547.	Groundwater	CFMEU	SIG12	Seepage of groundwater from the aquifers intersected during mining will reduce groundwater pressures in the coal seams and overburden/interburden aquifers around the mining areas. This will lower the water table of an unconfined aquifer or depressurise a confined aquifer.

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548.	Groundwater	CFMEU	SIG12	The zone of influence for the shallow regolith / alluvium is predicted to be restricted to the immediate vicinity surrounding the mining areas. This is a maximum distance of approximately 600 metres to the west and south of the mining areas in Year 27. The zone of influence within the shallow alluvium is not predicted to extend into the Hunter River alluvial aquifer; however, it is predicted to extend marginally into the Saddlers Creek alluvium.
549.	Groundwater	CFMEU	SIG12	The zone of influence for the Permian coal measures is predicted to be restricted to a maximum distance of approximately 1 kilometre to the west and south of the mining areas at Year 27 and extend under Saddlers Creek alluvium. The zone of influence within the coal measures is not predicted to extend beneath the Hunter River alluvium at the end of mining.
550.	Groundwater	CFMEU	SIG12	The zone of influence migrates southwards towards the Hunter River over time, but not measurably beneath these alluvial lands. The Project is predicted to have only very limited impacts on the alluvial lands associated with the Hunter River.
551.	Groundwater	CFMEU	SIG12	The vertical leakage fluxes between the alluvial deposits associated with Saddlers Creek and the underlying coal measures will be affected due to the proximity of the Project. The pre-mining net upward seepage flux to the Saddlers Creek alluvium is in the order of 0.31 ML per day. Operations at Mt Arthur Coal Mine are predicted to result in a maximum reduction in net flux to the Saddlers Creek alluvium of 0.18 ML per day. The remaining influx to the Saddlers Creek alluvium of approximately 0.12 ML per day may therefore be reduced to zero as a result of the Project.
552.	Groundwater	CFMEU	SIG12	The groundwater quality may improve in the Saddlers Creek alluvium as discharge of higher salinity groundwater from the coal measures into the alluvium is predicted to be reduced. This may result in a freshening of groundwater resulting from downward migration of rainfall recharge and creek recharge. The groundwater quality within the Hunter River alluvium is not expected to measurably change as a result of the Project.
553.	Groundwater	CFMEU	SIG12	A total of two registered groundwater bores are located within the zone of influence at Year 27. Both of these groundwater bores are located on land owned by the proponent, and will be intercepted by mining.
554.	Groundwater	CFMEU	SIG12	The final void within the Drayton South area will collect and accumulate water from a number of sources. The

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				post mining equilibrium water level is predicted to reach reduced level 117 metres after approximately 1 000 years.
555.	Groundwater	CFMEU	SIG12	It is proposed that rejects and tailings generated at the CHPP from the Drayton South operation will be deposited in the remaining void at Drayton Mine.
556.	Groundwater	CFMEU	SIG12	Under all scenarios for disposal of tailings in the East Void at Drayton Mine, the cone of depression will be retained and the water table within the void remains below the surrounding groundwater level, therefore it is unlikely that leachate will migrate out of the void.
557.	Groundwater	CFMEU	SIG12	As detailed previously for other environmental criteria a revision of the existing Drayton Mine water management plan will be undertaken to encompass the new procedures and targets required for the Project.
558.	Traffic and Transport	CFMEU	SIG12	A traffic and transport impact assessment was undertaken by DC Traffic Engineering for the Project. The assessment concluded that there are not anticipated to be any significant increases in traffic as a result of the Project. This is largely due to the fact that the existing operations workforce will continue to be utilised by the Project and that mine access during the operations phase will continue to be via the existing Drayton Mine Access Road off Thomas Mitchell Drive.
559.	Traffic and Transport	CFMEU	SIG12	Traffic modelling shows that when considering future proposed projects that the current configuration of the Denman Road / Thomas Mitchell Drive intersection and the Thomas Mitchell Drive / New England Highway intersection would perform at a poor level of service during the peak construction and operations phase. However, Mt Arthur Coal Mine has committed to upgrade these intersections as part of their current Project Approval. The planned upgrades will resolve the predicted traffic issues that would have been otherwise experienced at these intersections during construction and peak operations.
560.	Traffic and Transport	CFMEU	SIG12	Construction works for the Edderton Road realignment are not expected to significantly disrupt traffic. The existing Edderton Road will remain operational throughout the construction period. It will only be closed once the new alignment has been completed.
561.	Traffic and Transport	CFMEU	SIG12	As part of this assessment the potential impacts on rail traffic were assessed, During peak production the Project will require a total of 308 trains to transport product coal to Newcastle. This equates to two trains per day which is in line with Drayton Mine's existing approval. As such the Project will not result in any additional

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				trains on the Antienne Rail Spur or Main Northern Railway.
562.	General	CFMEU	SIG12	Approved mining operations at Drayton Mine are scheduled to continue until the expiry of the current Project Approval in 2017. The Drayton South coal resource was identified in the early 1900's. The Project maximises resource recovery and economic returns from capital already invested in Drayton Mine and minimises environmental costs by utilising existing infrastructure and the final landform at Drayton Mine. Anglo American Metallurgical Coal Pty Ltd, on behalf of Drayton Mine seeks approval for the Drayton South Coal Project under Part 3A of the EP&A Act. The modification relates to the development of an open cut and highwall mining operation extracting up to 7 Mpa of ROM coal over 27 years. The technical studies conclude that adverse environmental impacts would be either minimal or manageable. The introduction of new environmental controls and existing environmental management strategies and management plans revised to include the Project should ensure compliance with the most stringent environmental Project targets. The Project is considered to be consistent with relevant objectives of the EP&A Act, including the principles of Ecologically Sustainable Development. On considering the balance of environment and community impacts, it is considered reasonable to conclude that the benefits of the Project significantly outweigh the impacts. The Union on balance supports the proponent's application 11-0062 and asks for the extension to be granted. The Hunter Thoroughbred Breeders Association (HTBA) appreciates the opportunity to comment on the AngloAmerican's Environmental Assessment (EA) for its Drayton South open cut proposal. The HTBA opposes the submission by AngloAmerican for an open cut coal mine directly opposite two of Australia's largest, international scale, thoroughbred breeding operations. We oppose this proposal for an open cut coal mining operation not only because it is clearly incompatible with international scale thoroughbred breeding enterprises (as found by the Bickham Planning Assessment Commission in its 2010 report) but because the Drayton South Environmental Assessment: is manifestly deficient in its assessment of the surface and ground water impacts of the proposal. In our view the water risks associated with this proposal are unacceptably high, are not adequately assessed, and may have unknown consequences for the Hunter Valley's already highly stressed water systems for
563.	General	HTBA	SIG13	
564.	Agriculture	HTBA	SIG13	
565.	- Groundwater - Surface Water	HTBA	SIG13	

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				hundreds of years after mining has ceased;
566.	Agriculture	HTBA	SIG13	fails to assess the impact of this proposed open cut coal mine on the Hunter Valley's thoroughbred breeding industry as required by the Agricultural Impact Statement;
567.	- Agriculture - Economics	HTBA	SIG13	fails to assess the impact of this proposed open cut coal mine on the Hunter Valley's thoroughbred breeding industry in the economic impact assessment. The Drayton South EA makes assumptions that overstate the economic benefits of the project which if corrected could materially alter the proposal's economic impact assessment;
568.	- Agriculture - Economics - Social	HTBA	SIG13	fails to adequately assess the impact of the Drayton South open cut coal mine on the Hunter Valley's thoroughbred breeding industry and community in the socio-economic impact assessment by ignoring the incompatibility of land uses, underestimating the long term social costs from an open cut coal mine with a finite life compared to sustainable thoroughbred breeding industry and other agriculture that could operate in perpetuity;
569.	Air Quality	HTBA	SIG13	reveals serious deficiencies in the air quality analysis;
570.	- Agriculture - Visual	HTBA	SIG13	presents unacceptably high visual risks which will irreversibly alter the Hunter Valley landscape and topography, be evident for over two decades, and materially and adversely impact on the productivity and investment attractiveness of the Hunter Valley studs located within 1km of this project, and the entire thoroughbred breeding and support industries concentrated in the Hunter Valley;
571.	Human Health	HTBA	SIG13	fails to address and account for the cumulative health impacts of this proposal on the Hunter Valley community;
572.	Equine Health	HTBA	SIG13	presents information on horse health that is incorrect or has little relevance to the majority of horses in the Hunter Valley region;
573.	Traffic and Transport	HTBA	SIG13	does not adequately address the road safety impacts of the Project;
574.	- Cumulative - General	HTBA	SIG13	fails to adequately address the broader and often interrelated impacts of the proposal. This is a recurring problem throughout the EA (including its appended reports) that systematically fails to acknowledge and

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				assess the cumulative impacts of existing mines together with this proposal on the local community and sustainable business operations.
575.	Cumulative	HTBA	SIG13	The Drayton South EA fails to undertake any cumulative impact assessment of the impacts of mining in the Hunter Valley. This is a serious omission yet a vital consideration for the NSW Government, for Hunter Valley residents and communities, the future of sustainable agricultural businesses and the long term future of the region.
576.	- Agriculture - Cumulative	HTBA	SIG13	The Hunter Thoroughbred Breeders Association is of the strong view that the Drayton South proposed open cut coal mine is a high risk project that could critically and irreversibly affect the Hunter Valley's thoroughbred breeding industry - one of Australia's highest value and internationally acclaimed industries and an industry that is recognised by the NSW Government to be of regional and state significance. There is a very real risk that the addition of this mine to the Hunter Valley, when considered jointly with existing and proposed mines in the area, could exceed critical thresholds, precipitate the demise of the Hunter Valley thoroughbred breeding industry and result in Australia no longer having one of only three International Centres of Thoroughbred Breeding Excellence in the world. In our view, there is too much at stake and this is not a risk worth taking. The attached submission provides further details on all of the abovementioned issues.
577.	- Agriculture - Regulatory and Planning Context	HTBA	SIG13	This project is the first to be considered by the NSW Government since the announcement of its Strategic Regional Land Use Plan for the Upper Hunter. It will be the first test of the Government's new planning processes and whether these processes will truly protect our state and nationally significant industries as the Premier and Ministers have promised.
578.	- Agriculture - Regulatory and Planning Context - Social	HTBA	SIG13	The Drayton South proposal is being considered under Part 3A planning processes and is not subject to the "Gateway". Given the serious implications of this proposal, the threats it poses to the Hunter Valley's multi-billion dollar thoroughbred breeding industry, to other sustainable industries in the area (including award winning wineries), the land use conflict this proposal will perpetuate, and the irreversible effect it will have on the Hunter Valley environment, businesses, community and landscape we urge the NSW Government to immediately establish an Interim Gateway Panel and refer this proposal to that Panel for independent consideration.

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579.	- Groundwater - Surface Water	HTBA	SIG13	Given the serious and high risks posed by the Drayton South open cut coal mine proposal to the Hunter Valley's already highly stressed water systems, we urge the Government to immediately refer this proposal to the Commonwealth Independent Scientific Expert Committee for independent evaluation
580.	Economics	HTBA	SIG13	Further we recommend that the NSW Government reconsider the suitability of a 7% discount rate as it masks the economic impacts when mining projects draw to a close and biases decision making towards short-term development over long-term sustainable agricultural businesses. Economic assessments of sustainably related initiatives are increasingly using lower discount rates, for example the Garnaut Climate Change Review used discount rates between 1 and 4% and we suggest that consideration be given to a more appropriate discount rate to be applied to the Drayton South project and all other mining projects.
581.	General	HTBA	SIG13	We note that the EA has been prepared with the input of many consultants over a number of years and comprises over 4,000 pages. This is a substantial volume of information for landholders to digest, assess and prepare and lodge a submission in a six week period prior to Christmas. We thank the Department of Planning for allowing us and others some additional time over Christmas –New Year break to review and provide some balance and proper scrutiny into this issue. It is our view however that the short exhibition period and the highly complex nature of EAs represents a serious flaw in the planning process is biased in favour of mining companies as individual landholders are not financially or technically equipped to properly evaluate and comment on highly complex assessments in such a short timeframe. In this case this situation was exacerbated by the timing of the exhibition period (weeks before the Christmas holiday period). The partisan nature of EAs and their supporting reports further complicates the integrity and independence of information submitted for evaluation as part of the planning process.
582.	General	HTBA	SIG13	The HTBA suggests the Government give serious consideration to instituting independent evaluation of mining proposals (commissioned by the Government and paid for by the proponents). Such reviews should be independently peer reviewed so that all involved can be satisfied of the rigour, independence and integrity of the information provided to decision makers. This would enable the production of independent environmental assessments, restore credibility in the system, benefit the NSW Government, NSW taxpayers and affected communities and landholders, and better inform the decision making process. The HTBA would

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				welcome the opportunity of working with the NSW Government to develop such a proposal.
583.	Agriculture	HTBA	SIG13	The Hunter Thoroughbred Breeders Association represents over 150 industry participants including thoroughbred breeders and suppliers of equine support services. The Hunter Valley's Thoroughbred Breeding Industry is Australia's premier multi-billion dollar breeding industry, representing over half of all thoroughbreds produced in Australia. It is Australia's largest producer, supplier and exporter of premium thoroughbreds and acknowledged as one of only three international centres of thoroughbred breeding excellence in the world. It is an important employer of hundreds of thousands Australians (directly and indirectly) throughout our value chain regionally, in NSW and across the nation. Appendix 1 to this submission provides more details on our industry and its history in the Hunter Valley. The Hunter Thoroughbred Breeders Association appreciates the opportunity to comment on Anglo American's Environmental Assessment for the proposed Drayton South open cut coal mine in the Upper Hunter.
584.	- Groundwater - Surface Water	HTBA	SIG13	<u>Surface and Groundwater interactions</u> Surface water and groundwater interactions in the Upper Hunter region are significant in respect of the hydrological regime and groundwater availability and use. Consequently any changes in surface water characteristics are likely to influence the groundwater resources of the area. Similarly any changes in groundwater levels will have the potential to cause significant impacts on in-stream values.
585.	- Groundwater - Surface Water	HTBA	SIG13	With significant changes affecting the Upper Hunter over recent years, the surface water and groundwater resources have become increasingly vulnerable and valuable. The Hunter Valley water system is currently considered "highly stressed" due to the over-allocation of water resources.
586.	- Groundwater - Surface Water	HTBA	SIG13	The potential effects of this project on the Hunter Valley's stressed water systems are confronting and concerning. Any impact on the quality and supply of water on either or both surface and groundwater systems as a result of this project could be significant. Impacts to drainage of aquifers, filling of voids, discharge of salinity, depressurization of aquifers could affect our water supplies for 100s or thousands of years to come.
587.	Groundwater	HTBA	SIG13	It is very disturbing to read in the Drayton South EA that water levels in the final void are predicted to reach 85% of post-mining equilibrium within 147 years after the cessation of mining. It is even more concerning to

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				read about reductions to the Hunter Valley alluvium that may occur 400 years after mining has ceased. Other water effects are predicted to occur 700 to well over 1,000 years after mining has ceased. These indicators should be signalling the high risk nature of this proposal and the need for a precautionary approach to be adopted by the Government to safeguard our water supplies now and for future generations.
588.	Groundwater	HTBA	SIG13	Specific concerns relating to both the final void assessment results and in particular the interpretation thereof include: No recognition of the highly uncertain nature of the groundwater modelling upon which the very long term outcomes are based.
589.	- Groundwater - Surface Water	HTBA	SIG13	The uncertainty in the approach and minimal detail committed to final void behaviour outcomes (approx. 1 page in SW report) are particularly concerning given that the model indicates a change in the long term behaviour of the void from a “sink” (i.e. drawing water from the natural surrounding aquifers) to a losing system in which (the now hypersaline) void water seeps back into the surrounding aquifers and local watercourses.
590.	- Groundwater - Surface Water	HTBA	SIG13	No meaningful discussion is provided regarding the effect on groundwater and surface water resources in either the initial period (i.e. steadily increasing TDS towards hypersalinity and continued drawdown of connected aquifers) or the simulated very long term conditions of flow of this now hyper saline void water back into the natural system
591.	Groundwater	HTBA	SIG13	Notwithstanding the significant, unrecognised uncertainty in the model results, the time-scales attributed to changing void behaviour and any consequent impacts are of a scale (i.e. 100's to 1,000's of years) which would preclude any potential for management or mitigation of the impacts by the company and would become by default a legacy borne by the local and regional communities as well as a long-term liability for the State.
592.	Surface Water	HTBA	SIG13	The Drayton South EA: reveals serious deficiencies with respect to the assessment of surface water impacts of the proposal;
593.	Surface Water	HTBA	SIG13	fails to provide credible justification for the assumptions underpinning the water balance modelling relating to the behaviour of mine waters over the life of the proposal;

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594.	Surface Water	HTBA	SIG13	fails to undertake any sensitivity analysis or testing to assess potential impacts of adopted runoff parameters or water quality assumptions;
595.	Surface Water	HTBA	SIG13	neglects to include conditions between 2006 and 2012 (which include both an extended dry period and significant wet conditions) in the water balance modelling;
596.	Surface Water	HTBA	SIG13	manifestly fails to provide adequate, justified analysis of the proposal's water implications. The EA's generic treatment of the proposal's potential impacts, particularly where the interrelated impacts remain unknown, are not acknowledged nor adequately assessed;
597.	- Groundwater - Surface Water	HTBA	SIG13	is silent on the potential impacts, management or mitigation of salinity increases in the final mine void;
598.	Surface Water	HTBA	SIG13	fails to adequately assess the potential implications for the long term impacts of the proposal on the salinity of the Hunter River;
599.	Surface Water	HTBA	SIG13	provides no consideration, identification or assessment of the impact of the proposal for other water users, enterprises or sensitive receiving environments;
600.	Surface Water	HTBA	SIG13	provides no meaningful assessment of potential mine induced reductions in unregulated flows and their aesthetic, environmental and/or water use impact
601.	Groundwater	HTBA	SIG13	The Drayton South EA uses a Groundwater Numerical Model (GNM) as the basis for the groundwater impact assessment for the proposal. However: no independent peer review of the model is undertaken or reported in the EA;
602.	- Cumulative - Groundwater	HTBA	SIG13	the model omits any clear explanation of its integration with surrounding existing impacts – including cumulative impacts from existing operations;
603.	Groundwater	HTBA	SIG13	the EA fails to acknowledge that the groundwater impacts resulting from the proposal are likely to be compounded by the impacts of adjacent mining projects (for example the reactivation of Saddlers Pit at Mr Arthur Coal Mine is expected to influence groundwater levels in the Saddlers Creek alluvium);
604.	Groundwater	HTBA	SIG13	the baseline monitoring for this proposal has been insufficient – so much so that it compromises the

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				model's treatment of ambient groundwater conditions.
605.	- Groundwater - Surface Water	HTBA	SIG13	The deficiencies identified in the water modelling of this proposal are so significant, and the risks so high (to the thoroughbred breeding industry, the community, other landholders, water users and the environment) for many hundreds of years after the mining has ceased that the NSW Government should take a precautionary approach to this high risk proposal. The regional community and affected landholders need to be satisfied that all water impacts are identified, assessed, mitigated or avoided.
606.	- Groundwater - Surface Water	HTBA	SIG13	The HTBA strongly recommends that the water impacts of this proposal be referred to the Commonwealth Independent Scientific Expert Committee to fulsomely, credibly and independently assess the considerable water risks associated with this proposal.
607.	- Agriculture - Economics - Regulatory and Planning Context - Social	HTBA	SIG13	The Drayton South open cut coal mine proposal is the first to be considered under the Government's new Planning approval processes following the finalisation of the Upper Hunter Strategic Regional Land Use Plan. Despite this, the Drayton South proposal is being considered under the old Part 3A process and is not subject to the full rigours of a Gateway process. As part of the EA, Anglo American were required to complete an Agricultural Impact Assessment, Economic and Social Impact Assessments and to address the Gateway criteria when assessing the impacts of the proposal on strategic agricultural land. It is our view that these assessments fail to accurately examine and assess the impacts of this proposal on the thoroughbred breeding industry and other vital agricultural industries both locally and on a regional basis.
608.	Agriculture	HTBA	SIG13	Requiring mining companies to undertake explicit agricultural impact assessments was a key Coalition election promise which is now part of the Strategic Regional Land Use Policy and an essential consideration at both the exploration licence and development application stages. The requirement of an Agricultural Impact Statement (AIS) ensures a targeted assessment of the potential impacts of mining and coal seam gas on valuable agricultural and water resources.
609.	Agriculture	HTBA	SIG13	The primary purpose of an AIS is to determine <i>"the significance of agricultural resources – including land and water – and associated businesses in the project area and surrounding locality; and the potential impact of the project on agricultural land, water and businesses at a local and regional level."</i> Anglo American's AIS identifies a number of agricultural enterprises in the vicinity of the proposed Drayton South open cut mine. These include beef cattle grazing, 7 thoroughbred breeding operations, 11 dairies, 4

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				vineyards and an olive grove processing plant. Despite identifying the agricultural gross values of the majority of these industries, the Drayton South AIS fails to identify and quantify the impact of this proposed open cut coal mine on the thoroughbred breeding and wine making enterprises at both the local level and regional level as required by the AIS Guidelines.
610.	Agriculture	HTBA	SIG13	The 2010 Planning Assessment Commission's independent findings into the open cut mine proposed at Bickham in the Upper Hunter, found that <i>"The thoroughbred industry in the Upper Hunter Valley is a very significant contributor to the regional, state and national economies and a major source of employment. The structure of the industry makes it particularly vulnerable to threats based on image and the introduction of coal mining to the Upper Hunter Valley is strongly identified as such a threat. The available evidence supports the view that open-cut coal mining and a viable international-scale thoroughbred breeding enterprise are incompatible land-uses."</i>
611.	- Agriculture - Economics	HTBA	SIG13	Despite this finding and the requirements of the AIS, the Drayton South AIS gives no serious consideration to or analysis of the impact of this proposal on Australia's premier thoroughbred breeding industry. Rather Anglo American's experts, Scott Barnett & Associates with supporting analysis by Gillespie Economics, suggest that <i>"The Project will not reduce the availability of land for agricultural purposes or affect the productivity of existing agricultural land within the immediate locality, including land utilized by either equine or viticulture enterprises. As such, this has not been discussed further in the assessment. (Agricultural Impact Assessment Report, Scott Barnett & Associates, p39).</i>
612.	- Agriculture - Visual	HTBA	SIG13	The HTBA strongly disagrees and challenges this finding. At best it shows a total lack of understanding of the impact (visually, reputationally, environmentally and to landholder productivity) this project will have on not only the thoroughbred studs directly impacted by this proposal but to our entire, vertically integrated industry. At worst this is a very partisan report that clearly misunderstands, misrepresents and obfuscates the impact this proposal will have to the Hunter Valley's multi-billion dollar internationally recognised thoroughbred breeding industry.
613.	Agriculture	HTBA	SIG13	By submitting such a misinformed AIS, the Drayton South EA clearly demonstrates the need for truly independent assessments that properly assess the project's impacts and fairly, impartially and credibly represent these findings so that decision makers can make fully informed decisions.

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614.	Agriculture	HTBA	SIG13	The Drayton South AIS manifestly fails to assess the impact of this proposal on valuable agricultural resources at both the local and regional level. The HTBA is strongly of the view that the proponent should be required to resubmit an AIS which adheres to the policy guidelines and properly, fairly and transparently assesses the impact of this open cut coal mine proposal on the thoroughbred breeding industry and other valuable agricultural resources. To ensure that this will be done in a fair and unbiased manner the HTBA strongly recommends that the NSW Government commission its own report (paid for by the mining company), undertaken by truly independent and credible experts, so that Government decision makers can make fully informed decisions on this project. Alternatively the NSW Government should commission and independent team of experts to peer review all agricultural, social and economic impact assessments to inject both credibility and rigour into the decision making process.
615.	Agriculture	HTBA	SIG13	The Drayton South Economic Impact Assessment and Social Impact Assessment have been undertaken by Gillespie Economics and Hansen Bailey for Anglo American. These assessments conclude that the Drayton South open cut coal mine proposal will yield net economic benefits of at least \$490m.
616.	Economics	HTBA	SIG13	<u>Economic Impact Assessment</u> The Drayton South economic impact assessment erroneously assumes that this open cut coal mine will not impact upon the neighbouring thoroughbred breeding enterprises as they are compatible operations. The HTBA strongly disagrees with this assertion.
617.	Economics	HTBA	SIG13	The Hunter Valley's multi-billion thoroughbred breeding industry, and particularly the international scale thoroughbred breeding operations of Darley Australia and Coolmore Australia, which are within 1 km or less (500m in the case of Darley) of the project are clearly not compatible with an open cut coal mining development on their doorstep.
618.	Agriculture	HTBA	SIG13	The thoroughbred breeding operations of Darley Australia and Coolmore Australia are: - world renowned as elite thoroughbred breeding businesses; - market leaders in the Hunter Valley, Australia and globally;
619.	- Agriculture - Economics - Social	HTBA	SIG13	

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				- owners of high value land and bloodstock assets; - employment intensive businesses that have close links with the regional economy (85% of operational expenditure is spent within the local region); - critical to the Hunter Valley's vertically integrated thoroughbred breeding industry; - important and sustainable contributors to support industries and the regional economy; and - highly susceptible to issues that threaten their reputation, ability to attract clients and investors, their productivity and livelihood. Open cut coal mining and international scale thoroughbred breeding enterprises are incompatible land uses
620.	Agriculture	HTBA	SIG13	The 2010 Planning Assessment Commission recognised that <i>"the structure of the industry, the obvious importance of reputation ... makes the industry very vulnerable to threats based on image."</i> The location of an open cut coal mine directly opposite two of Australia's world leading thoroughbred breeding operations poses a clear and imminent threat to these multi-billion dollar businesses their image, productivity, clients, investors and their reputation.
621.	- Agriculture - Economics	HTBA	SIG13	Not only is the Drayton South EIS inconsistent with the 2010 Planning Assessment Commission's independent assessment that open cut coal mines and international scale thoroughbred breeding enterprises are incompatible land uses this and other assumptions necessarily leads to the economic benefits of the project being overstated and if corrected could materially alter the economic impact assessment.
622.	Economics	HTBA	SIG13	For example: we would question why a 'spot price' for thermal coal price has been used in the analysis, particularly when the spot price is some 30 per cent higher than current forecasts by the World Bank and Bureau of Energy and Resource Economics;
623.	- Agriculture - Economics	HTBA	SIG13	mining is highly price sensitive and recent price reductions have led to the closure of a number of projects. If this scenario were to eventuate for the Drayton South open cut coal mine, when coupled with the closure of local thoroughbred breeding operations and other related industries in the region (because these industries are incompatible) the regional social and economic impacts of this proposal would be

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				very significant;
624.	- Agriculture - Economics	HTBA	SIG13	the Drayton South mining proposal's exclusion or underestimation of important elements such as the impacts on the thoroughbred breeding industry, its farm productivity, land values, regional economic contribution and employment.
625.	- Agriculture - Economics	HTBA	SIG13	The Economic Impact Assessment should reflect the impacts of this proposal on Australia's thoroughbred breeding industry by including either farm impacts or land value impacts on neighbouring properties, reflecting the reality that they would no longer be viable for international class thoroughbred operations.
626.	Tourism	HTBA	SIG13	Tourism in the region will also be affected. The Stallion Parades that occur in the last weekend of August of every year, attract some 5,000 clients and potential investors to the region annually. This is the second largest tourism attraction event in the Hunter after the Stand Alone Scone Race Days which attract some 10,000 visitors and attendees. The existence of an open cut coal mine directly opposite two of Australia's international scale and market leading thoroughbred breeding studs will significantly impair their and the industry's operations and negatively impact productivity, reputation, investment attractiveness, future viability and tourism development.
627.	- Agriculture - Economics - Social	HTBA	SIG13	<u>The risk of approving one mine at the cost of an entire industry</u> It is clear to anyone who understands the nature and operation of thoroughbred breeding enterprises that the Drayton South open cut coal mine poses a direct and significant threat to the image, reputation and future of Australia's premier thoroughbred breeding studs and industry. If as a result of the Drayton South open cut coal mine proposal the Hunter Valley loses the top end of the thoroughbred breeding industry there would be material and irreversible costs that would be felt throughout the thoroughbred breeding, racing and related industries. If this were to occur the concentration of thoroughbred breeding activities would unravel, the Hunter Valley could lose its status as an International Centre of Thoroughbred Breeding Excellence and Australia could lose a multi-billion dollar industry and market.
628.	Economics	HTBA	SIG13	<u>Standard Discount Rates unfairly favour short term mining operations</u> We note that the application of NSW Treasury's standard discount rate (7%) to a project which involves a trade-off between open cut coal mining with a finite life (26 years) compared to a sustainable high value,

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				nationally and regionally strategic agricultural industry that could operate in perpetuity is seriously concerning.
629.	Economics	HTBA	SIG13	The suitability of a 7% discount rate needs to be carefully reviewed as it masks the economic impacts in year 27 when the project draws to a close and biases decision making towards short-term development over long-term sustainable agricultural businesses. Economic assessments of sustainably related initiatives are increasingly using lower discount rates, for example the Garnaut Climate Change Review used discount rates between 1 and 4%.
630.	- Agriculture - Economics	HTBA	SIG13	This approach is echoed by the Federal National Party in the additional comments made to the Federal Senate Committee Interim Report on The Impact of coal seam gas mining on the Murray Darling Basin. In this Interim Report the Federal Nationals recognised that <i>"Prime agricultural land is an asset whose lifetime is infinite and therefore the prospective cash flow would have to take into account the value of agricultural produce over thousands of years. The return to the nation over the long term is vastly superior from agriculture than from mining and as the premier of agricultural assets, prime agricultural land should be protected."</i>
631.	- Agriculture - Social	HTBA	SIG13	Similar to the economic impact assessment the social impact assessment needs to be grounded in an empirical framework that considers the social impacts both "with" and "without" the project. The lack of this framework and the premise that the thoroughbred breeding industry and open cut coal mining are compatible activities translates to a social impact assessment that: ignores the incompatibility of thoroughbred breeding and mining which are competitive land uses;
632.	Social	HTBA	SIG13	underestimates the social costs associated with Drayton South's open cut coal mine proposal;
633.	- Agriculture - Social	HTBA	SIG13	fails to assess the impact of the potential closure of an international thoroughbred breeding industry and the impact this will have on direct and indirect job losses in the local, regional and state economies;
634.	- Agriculture - Social	HTBA	SIG13	fails to adequately consider the long-term social costs from an open cut coal mine with a finite life compared to a sustainable world renowned industry that could operate in perpetuity;
635.	Agriculture	HTBA	SIG13	fails to recognise the lasting and sustained shock to local, regional and state economies of the loss of a

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	Social			viable and employment intensive thoroughbred breeding industry versus the short term gains from one finite mining operation.
636.	Social	HTBA	SIG13	The Drayton South open cut coal mining proposal is a high risk project that could critically and irreversibly affect one of Australia's highest value and internationally reputed industries. The Hunter Valley's thoroughbred breeding concentrated critical mass cannot be relocated. The risk one mine poses to the entire industry is too great a risk to take.
637.	- Agriculture - Economics - Social	HTBA	SIG13	The Drayton South agricultural impact statement and socio-economic impact assessments ignore and misrepresent the impact this mining proposal will have on our industry and to the local, regional and state economies. Short term gains should be balanced against the preservation and protection of long term sustainable industries. Australia's reputation as a world leading thoroughbred breeding and racing centre is at risk along with the equine support industries, the thousands of Australian jobs and the communities that rely on them.
638.	- Agriculture - Economics - Social	HTBA	SIG13	HTBA strongly recommends that the NSW Government should commission its own socio-economic reports (paid for by the mining company), undertaken by truly independent and credible experts. Such reports should be peer reviewed, use appropriate discount rates for agricultural operations that could occur in perpetuity and provide unbiased, expert advice to decision makers.
639.	Air Quality	HTBA	SIG13	Air Quality is a significant issue for the Hunter Valley thoroughbred breeding industry and the Hunter Valley community. The HTBA is very concerned at recent reports ¹ of over 200 air quality breaches of national and international air pollution standards in the Hunter during 2012. ¹ 200 air quality breaches in the Hunter, Newcastle Herald, 4 January 2013
640.	- Air Quality - Cumulative - Human Health	HTBA	SIG13	While there may be some debate about the accounting practices used to determine a small number of these results, the fact remains that these breaches are too high and real-time assessments (not averages over a 6 day period) are needed so that air quality breaches are significantly reduced and every effort is taken to protect Hunter Valley communities and industries from the deleterious effects of air pollution. The cumulative impacts of open cut coal mining, mentioned in this submission, on air quality and health is long overdue. This issue warrants independent assessment and strict enforcement of serious penalties. Air quality and its impact on the health of our communities warrants serious action not spin.

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641.	Air Quality	HTBA	SIG13	Our preliminary review of the Drayton South EA suggests that there are some serious deficiencies in the air quality analysis that need to be explained and rectified. These include: - the lack of TSP and PM10 records (recorded on 24 hour averages every 6th day). This suggests that it is possible that not all background is reported and that certain weather events that exacerbate background concentrations will be missed; - the proponent has avoided any assessment that indicates dust deposition rate data is generally increasing with monitoring years. This may link to ever increasing mining intensity for the region; - power station cumulative contributions (both current and potential future) are not adequately captured by the existing HVAS monitoring network. Consequently there is concern that air quality impacts from power stations are underestimated. This underestimation could also lead to the simulation of fewer dust exceedence events than would otherwise be estimated as occurring due to the project; - the above concerns are reinforced by PAEHolmes admission that the monitoring network is scarcely located; - there is no year-by-year comparison of climatic statistics that may substantiate why 2005 was the best year to model the project; - the lack of information at Appendix A on wind rose information for Macleans Hill upon which the selection of 2005 as a representative year for air dispersion modelling was based; - the significant irregularities between stations in the recorded data that has been provided (for example the September 2009 dust storm is not represented at all stations); - no discussion of regional climate change and how climate change may impact on surface wind speeds, rainfall, air temperature, evaporation, periods of wind calm and other meteorological parameters that have the potential to influence the dispersion of dust from the Project site; - PAEHolmes has provided no sensitivity analysis on the increase in off-site impacts relating to climate change impacts associated with the project; - the detail and approach of the proposed Monte Carlo methodology requires at a minimum more
642.	Air Quality	HTBA	SIG13	
643.	- Air Quality - Cumulative	HTBA	SIG13	
644.	Air Quality	HTBA	SIG13	
645.	Air Quality	HTBA	SIG13	
646.	Air Quality	HTBA	SIG13	
647.	Air Quality	HTBA	SIG13	
648.	Climate Change	HTBA	SIG13	
649.	Climate Change	HTBA	SIG13	
650.	Air Quality	HTBA	SIG13	

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				explanation to show how and why this is a suitable assessment and at worst, this lack of detail implies that an accurate estimation of the cumulative impacts is not available.
651.	- Agriculture - Visual	HTBA	SIG13	The visual impact the Drayton South open cut coal mine will have on Darley, Coolmore, the reputation of the Hunter Valley's thoroughbred industry and the thousands of visitors to the area will be devastating and has been inadequately addressed by the Drayton South EA.
652.	- Agriculture - Visual	HTBA	SIG13	Visual amenity is a key element that underpins the thoroughbred breeding industry's business model. As an industry that breeds elite athletes and whose image, business and investment attractiveness is based on a clean, green image reliant on clean water sources, clean air, an undulating topography and fertile lands, any threats to this image, directly threatens our reputation and future viability.
653.	- Agriculture - Visual	HTBA	SIG13	The development of the Houston bund is estimated to take 16 months but it will take between 15 and 25 years before vegetation plantings will mature to a point where they could potentially conceal the bund. Furthermore there are operational and strategically important vantage points from both Coolmore and Darley (including Trigg Hill) where the effect of the open cut coal mining operations and residual landforms will be in clear view throughout and beyond the life of the mine. Coolmore has an on-property airstrip that is used by Coolmore clients and Darley regularly utilises helicopter transport to and from the Woodlands Property. The effects of the Drayton South coal mine in such close proximity to the both operations will have a significant effect on their clients and investors.
654.	- Agriculture - Tourism - Visual	HTBA	SIG13	No reasonable investor in our industry or any other sports or tourism related industry would choose to invest in a location next door to, across the road from, or on top of a coal mine. It is simply bad for business and clearly demonstrates that these land uses are incompatible and cannot and should not co-exist in such close proximity. The 2010 Planning Assessment Commission (PAC) recognised our industry's vulnerability to threats based on perception and reputation. It is why the PAC concluded that open cut coal mines and international scale thoroughbred breeding enterprises are incompatible land uses.
655.	General	HTBA	SIG13	The Drayton South EA: ignores the PAC's 2010 conclusions;

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656.	- Agriculture - Visual	HTBA	SIG13	underplays the significant visual threat that the Drayton South open cut coal mine proposal poses on international scale thoroughbred studs, our industry's reputation and future viability;
657.	- Agriculture - Visual	HTBA	SIG13	fails to recognise or acknowledge the importance of visual amenity to the reputation and future of the Hunter Valley's thoroughbred breeding industry;
658.	- Economics - Final Landform - Social - Visual	HTBA	SIG13	fails to adequately assess the visual effects of the Project either in the immediate short-term (ie. The initial 27 years of physical construction and operation) or longer-term (residual non-natural landforms, ongoing final void issues, etc) in its socio-economic impact assessments;
659.	- Agriculture - Visual	HTBA	SIG13	does not recognise or acknowledge the importance of air access (plane and helicopter) to both Darley and Coolmore properties by customers, visitors and potential investors. Nor does it acknowledge that regardless of any potential mitigation measures, visitors, clients and investors accessing these properties by air will experience high visual impact as a result of the close proximity of this open cut coal mine to international scale thoroughbred breeding enterprises;
660.	- Cumulative - Visual	HTBA	SIG13	fails to assess the cumulative visual impacts of this Project on the Hunter Valley landscape;
661.	- Air Quality - Cumulative - Equine Health - Visual	HTBA	SIG13	presents no consideration or assessment of the Project's cumulative light or dust impacts and the consequent adverse impacts on thoroughbred breeding activities;
662.	Visual	HTBA	SIG13	bases its visual mitigation strategy on tree plantings however fails to recognise that there is a high potential for failure (noting the inadequate existing mine screen planting in the vicinity) and the significant doubt relating to the success of this mitigation measure.
663.	Visual	HTBA	SIG13	We note that some of the key pictures and photomontages appended to the Drayton South EA are presented in a manner that soften, distort or make it difficult to visualise the effect and impact of this open

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				cut coal mine on the stud farms and the surrounding landscape. Through the selective use and softening of pictures and photomontages, the EA fails to fully and adequately show what the full visual impacts will be from all key vantage points and throughout the life of the mine. We append pictures of the visual impact of the mine from Trigg Hill (Darley's property) that show the direct and visual impairment that will occur in years 3, 5 and 10 and throughout the life of the mine to illustrate this point.
664.	- Agriculture - Visual	HTBA	SIG13	This is a very serious issue. The impact this mine will have on international scale thoroughbred breeding industries and the current landscape of Jerrys Plains will be irreversible. It is important for all stakeholders, the community and decision makers to have a full visual, warts and all picture of the actual impact this mine will have on the Jerrys Plains Landscape before it is too late. If a decision is made to proceed with this open cut coal mine the impact on our businesses, industry, community and landscape will be irreparable and irreversible.
665.	- Agriculture - Visual	HTBA	SIG13	The Drayton South EA recognises the high visual sensitivity of the Drayton South open cut mine proposal to urban and rural houses, horse studs and vineyards, tourist roads such as the Golden Highway and commercial facilities within a radius of 500m to 7.5km from the mine Yet it fails to adequately mitigate these effects and suggests in the Executive Summary of the EA that the visual impact on surrounding receivers will be limited for the majority of the mine life. This further demonstrates that open cut coal mines and international thoroughbred breeding enterprises in such close proximity cannot co-exist and are incompatible land uses. The key issue for this Government is whether one poorly located coal mine could be allowed to destroy an entire industry that is internationally acclaimed and recognised by the NSW Government to be nationally and state significant.
666.	Human Health	HTBA	SIG13	The University of Sydney recently (October 2012) published research into 10 countries on the effects of coal mining on communities. This research analysed 50 peer reviewed research papers from 10 countries². It: - found a critical lack of local studies investigating the effects of coal mining on Australian communities; - identified problems in children and infants in coal mining communities including impaired growth and neurological development, high blood levels of heavy metals, higher prevalence of birth defects and a greater chance of low birth weight – a risk factor for future obesity and heart disease;

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				- revealed that adults were shown to have higher rates of death from lung cancer and chronic heart, respiratory and kidney diseases. They also had increased chances of developing other cancers and hypertension. Some studies also showed higher rates of miscarriages and stillbirths; and - found that studies conducted in regions in the US, the UK, Canada, Turkey, Israel and Asia indicated serious health impacts for communities living near coal mines and coal combusting power stations ² Health and Social Harms of Coal Mining in Local Communities, Spotlight on the Hunter Region, University of Sydney, October 2012 These types of long-term, chronic health issues further increase the liability that would be borne by the State associated with the range of environmental, agricultural, social and economic impacts that would continue to accumulate long after mining operations (and any responsibility/input from the Company) had ceased. The Hunter Valley has more than 30 mostly open cut coal mines and six active coal-fired power stations. The communities in the Hunter Valley are literally canaries in the coal mine. Many federal and state members of Parliament have publicly recognised that the Hunter Valley is at a tipping point. The dearth of cumulative impact assessments on the effects of coal mining operations to the health of the Hunter Valley communities is a serious problem. The HTBA notes with serious concern the critical lack of studies into the effects of coal mining on Australian communities. We agree with the University of Sydney's international research findings that there is a pressing need for Australia to re-evaluate whether the overall health and social costs of Australia's reliance on a coal economy will ultimately outweigh its economic benefits. The Hon George Souris has publicly stated that <i>"it may be that the Upper Hunter Valley has reached saturation point with mining. The cumulative impact of dust fallout alone has reached a point where it may dictate the need for a pause on any new mining."</i>³ ³ Mine impacts should be determined first, Lets think more before we act, writes George Souris, Newcastle Herald, April 8 2010. The NSW Government has a duty of care to its communities that needs to be acted upon. The Drayton South EA fails to address and account for the cumulative health and social impacts of this proposal on the Hunter Valley community. HTBA strongly recommends that the EA either properly addresses, and
667.	- Agriculture - Human Health - Economics - Social	HTBA	SIG13	
668.	Human Health	HTBA	SIG13	
669.	- Human Health - Economics - Social	HTBA	SIG13	
670.	- Cumulative - Human Health	HTBA	SIG13	

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	Social			independently peer reviews (by credible independent experts not associated with coal companies) the cumulative health impacts of mining in the Hunter Valley or failing that the NSW commissions an independent cumulative health report (funded by the proponent) into the social and health impacts of coal mining and power generating operations in the Hunter Valley. This cumulative impact assessment should be done prior to any further decisions are taken on the Drayton South open cut coal mine proposal so that decision makers are fully and properly informed of the health impacts of this additional mining proposal on the Hunter Valley community.
671.	Equine Health	HTBA	SIG13	Australia's Thoroughbred Breeding Industry breeds elite athletes that are world-renowned. Published information on the possible effects of coal mining dust on equine health is scant. Our preliminary review of the equine health impacts presented in the EA suggest that: the EA information is based largely on studies of stabled horses in race training and has little relevance to the majority of horses in the Hunter Valley region;
672.	- Air Quality - Equine Health	HTBA	SIG13	the implication that horses commonly inhabit dusty environments but are well adapted to high levels of dust is inaccurate (as documented by the author himself throughout the report);
673.	- Air Quality - Equine Health	HTBA	SIG13	it is well established that a significant proportion of horses are adversely affected by the "dustiness" of their environments (this is detailed throughout the report);
674.	- Air Quality - Equine Health	HTBA	SIG13	no information is provided about the specific adverse effects associated with dust generated by coal mining;
675.	Equine Health	HTBA	SIG13	no information is provided to support the statement that "horses have a highly refined respiratory tract that greatly protects against contamination";
676.	Equine Health	HTBA	SIG13	the author appears to be attempting to trivialise the potential effects of environmental pollutants on equine airway by stating that these effects would be difficult to differentiate from the contribution of other factors. This is not a valid argument.
677.	- Air Quality - Equine Health	HTBA	SIG13	the statement that horses exposed to "high levels of dust can compete to the best of their ability" is incorrect and contradicted on numerous occasions in the body of the report;

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678.	- Air Quality - Equine Health	HTBA	SIG13	the author states that dust without endotoxin does not contribute to inflammatory airway disease (IAD) however this is not known for certain. Further this line of argument is not relevant to the potential effects of coal mining-related dust on horses on breeding farms;
679.	- Air Quality - Equine Health	HTBA	SIG13	the conclusions referring to cleaning practices and bedding types in stabled horses is irrelevant to dust associated with coal mining activities.
680.	Equine Health	HTBA	SIG13	In our view the equine health analysis presented as part of the Drayton South EA is misleading. It misunderstands and misrepresents the operation of our industry in the Hunter Valley and presents information on horse health that is incorrect, not well researched, not supported by empirical data and has little relevance to our operations and the majority of horses in the Hunter Valley.
681.	- Agriculture - Traffic and Transport	HTBA	SIG13	Safety on our roads is a primary concern for our industry and our community. Injuries, threats to or loss of life as a result of congestion or poor road construction is a very serious matter and concern to our industry and local communities.
682.	- Cumulative - Traffic and Transport	HTBA	SIG13	A preliminary review of the road traffic report prepared as part of the Drayton South EA suggests that the impacts of the Project on key intersections (such as Denman Road/Thomas Mitchell Drive, New England Highway/Thomas Mitchell Drive and the Drayton Mine Access Road/Thomas Mitchell Drive) and the Edderton Road are not adequately addressed. In our view the Drayton South EA: does not adequately address whether these intersections and roads will have sufficient capacity to safely accommodate significantly increased traffic associated with the proposed mine and adjacent mines;
683.	- Cumulative - Traffic and Transport	HTBA	SIG13	fails to include traffic associated with the planned expansion of Mt Arthur Coal;
684.	Traffic and Transport	HTBA	SIG13	raises serious issues relating to road safety as a result of increased traffic volumes;
685.	Traffic and	HTBA	SIG13	presents saturation levels and road capacity constraints that are serious concerns to users of these roads;

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	Transport			
686.	Traffic and Transport	HTBA	SIG13	exacerbates the existing road deficiencies.
687.	Traffic and Transport	HTBA	SIG13	Furthermore we do not agree with the Drayton South traffic report suggestion that any existing deficiencies relating to the Drayton Mine access road are not the responsibility of Anglo American.
688.	- Agriculture - Traffic and Transport	HTBA	SIG13	The above saturation and capacity constraints raise serious issues and pose significant safety concerns for all users of these roads, nearby communities and our industry. They demonstrate additional deficiencies in the EA and good reasons, from a community safety perspective, why this project should not proceed.
689.	- Agriculture - Blasting - Human Health - Noise - Visual	HTBA	SIG13	In addition to air quality, water and visual risks associated with this project, light, noise, blasting and vibration will have significant impacts on adjacent thoroughbred breeding studs, their employees and productivity, and to the reputation of the industry as a whole.
690.	- Agriculture - Blasting - Equine Health - Human Health	HTBA	SIG13	We are advised that 5 blasts per week would be required to support the proposed production rate of the Project. That equates to almost a blast every weekday. For thoroughbred breeding studs located directly opposite this proposed coal mine, and the communities of people and families who live on those studs, and the valuable livestock on these properties this continual process of blasting will be highly intrusive, damaging and plainly an untenable situation to endure for any period of time.
691.	- Agriculture - Blasting - Equine Health - Human Health	HTBA	SIG13	We do not agree with the implication that either people or livestock would or should become desensitised to blasting and vibration over time and suggest that his further illustrates a complete misunderstanding of potential impact and/or a desire for advocacy on the part of the assessment. This assumption is invalid, fundamentally misunderstands the nature of our business, the potential damage blasting could pose to valuable bloodstock and represents a most cavalier attitude to what the communities of people residing close to this mine should be expected to tolerate and live with.
692.	Noise	HTBA	SIG13	The Drayton South EA:

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				raises serious concerns in relation to background noise levels adopted in some locations;
693.	Noise	HTBA	SIG13	does not adequately address worst case noise assessment scenarios;
694.	Noise	HTBA	SIG13	incorrectly applies low frequency corrections;
695.	Noise	HTBA	SIG13	fails to assess actual noise exposure at affected receiver locations for rail noise assessment;
696.	Noise	HTBA	SIG13	factors in approvals for noise levels on rail which should not be included and could have potential impacts on noise exceedences;
697.	- Blasting - Equine Health	HTBA	SIG13	excludes any assessment of blasting overpressure on horses (despite acknowledging in the EA that at its peak noise levels would generally be considered unsettling for horses);
698.	- Blasting - Noise	HTBA	SIG13	is based on an “assimilation” of a gradual increase of noise over time which should not be relied upon as the basis for acceptability of response to blasting overpressure noise.
699.	Agriculture	HTBA	SIG13	The following are not included in this table: - Appendix 1: The Hunter Valle’s Thoroughbred Breeding Industry - Drayton South Open Cut Coal Mine Proximity to Darley Woodlands and Coolmore Australia - Photomontages
700.	Agriculture	Public United Pastoral	SIG14	Sunrise Town Planning Pty Ltd has been engaged by United Pastoral Pty Ltd, the owner of Arrowfield Estate to coordinate and prepare submissions on the proposed Drayton South Coal Project. Arrowfield Estate is on the Golden Highway adjacent to the southern boundary of the Drayton South Project approximately 600 metres from the mine disturbance area
701.	- Agriculture - Tourism	Public United Pastoral	SIG14	Background The Arrowfield Estate Vineyard was established in 1894 as a wine vineyard. The iconic property was developed in 1965 as fully commercial wine producer and is owned and operated by United Pastoral Pty Ltd which also owns and operates Hollydene and Wybong Estate Vineyards, the three of the oldest in the Upper Hunter Valley. The Estate was further developed in 1999 and again in 2004 to include a large warehouse cool room export

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				facility, restaurant, cellar door, offices, meeting rooms and staff quarters. Extensive building infrastructure remains on the property, managed in conjunction with Hollydene and Wybong Vineyards. United Pastoral wine enterprise is comprised of three separate premium vineyards and pastoral properties comprising Wybong Estate, Hollydene Estate that supply through and operate from the main infrastructure and facilities at Arrowfield. These are only with 25kms from each other and since 2003 have been fully integrated relying solely on Arrowfield as the hub for processing, marketing, administration, hospitality and export facilities. United Pastoral has detailed these issues regarding the development of the Drayton South Coal Project in the attached letter. The current owners are proposing a staged upgrade and development of the Arrowfield Estate to include a refurbished restaurant, cellar door and conference facilities, installation of 23 new high quality tourist cabins for visitors' accommodation together with the construction of two function centres with chapels, upgrade of internal access roads and car parking. The proposed development is an extension of the current major facilities on the property. The proposed works will provide additional facilities for weddings, meetings, conferences and other events for the existing tourist trade, local mining and equine industries in the Upper Hunter.
702.	- Agriculture - Regulatory and Planning Context	Public United Pastoral	SIG14	During the review of the EA documents and the site assessment, the following observations were made and need to be considered when the Department reviews the EA and requests additional clarification and information. The exhibited Environmental Assessment states the following on page 8 in relation to the Arrowfield property: <i>"In 2010, Arrowfield Estate was closed down and wine making infrastructure was removed. The property has recently been acquired by Hollydene Estate and does not currently operate as a vineyard or winemaking enterprise."</i> This lack of understanding of the current and proposed development of the Arrowfield site appears to influence the proper identification and assessment of impacts on the site. No reference is made to the development planning which has been underway with a development application currently being assessed by Muswellbrook Council. Even though Drayton South made a submission to the exhibited proposals.
703.	Agriculture	Public United	SIG14	The tourism focus of the Arrowfield development will be further enhanced with the completion of the Hunter

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	Tourism	Pastoral		Expressway by bringing the accommodation and facilities closer to potential users.
704.	General	Public United Pastoral	SIG14	According to Hunter Valley coal mining professionals, the proposed mine is topographically different to other mines in the Hunter Valley, in that due to the shallow nature of the coal seam along a fault line, the mine will be elevated exposing the workings to the surrounding landscape.
705.	- Air Quality - Agriculture - Blasting	Public United Pastoral	SIG14	There should be more detailed consideration of the potential impacts of blasting on the structural integrity of the wine storage buildings at Arrowfield as these buildings are comprised of huge concrete walls and foundations built into the hillside. These substantial concrete structures are embedded in to the bedrock and hill as part of the structural design. Due to the proximity of Arrowfield to the mine, the issue of fumes and the need for a Management Plan was raised and needs to address the possible effects from blasting both airborne and potentially poisonous blast fumes. Apparently the preparation of Fume Management Plans is an integral part of mining planning in Queensland but NSW is yet to have these measures included.
706.	- Air Quality - Economics - Social - Visual	Public United Pastoral	SIG14	Key Issues The key issues relate to air, dust, visual and socio-economic matters. Specialist consultants have been reviewed the exhibited documentation and have prepared detailed reports to accompany this submission. These reports are attached with the key issues summarized below.
707.	- Agriculture - Air Quality	Public United Pastoral	SIG14	Martin Belk at RCA reviewed the dust aspects and concluded; The dust impacts on the Arrowfield development (i.e., the cabins and chapel and as an extension of the current facilities); and the existing activities (e.g. the vineyards and facilities) as shown in the Air Quality Impact Assessment are significant, given a number of factors found in RCA's review particularly the large number of air quality exceedances at or near the location of the Arrowfield estate.
708.	- Agriculture - Noise	Public United Pastoral	SIG14	Ray Turnney at RCA reviewed the noise aspects and concluded: Overall I am not satisfied that the acoustic assessment by Bridges Acoustics represents the claimed worst case impacts and some additional information would need to be provided to correct that situation. Equally I am not satisfied that the acoustic assessment adequately details the acoustic impacts that will be observed at Arrowfield Estate over the course of the life of the Drayton South Expansion

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709.	Visual	Public United Pastoral	SIG14	The assessment was prepared by Environment and Planning. The key issues as follows: The VIA has not taken into account Arrowfield's development proposals currently before Council (including dust and light impacts, and impacts to views).
710.	Visual	Public United Pastoral	SIG14	The VIA has not assessed visual impacts at Arrowfield's existing facilities as an operating business (including dust and light impacts).
711.	Visual	Public United Pastoral	SIG14	The VIA has not adequately considered the DG's Requirement to assess visual impacts on tourists.
712.	Social	Public United Pastoral	SIG14	A review of the socio-economic aspects of the EA was undertaken by an experienced and specialised consultancy firm Lantz Marshal. In reviewing both reports, deficiencies and limitations were identified with recommendations as follows: A new comprehensive SIA be prepared.
713.	Economics	Public United Pastoral	SIG14	A new extensive economic analysis has been undertaken at a broad level with additional analysis to address the local and regional economic impacts deriving from the,
714.	General	Public United Pastoral	SIG14	Actions Required Timely resolution of these matters is paramount as the ongoing delays create potential financial distress for United Pastoral as it endeavours to achieve its business plans for Arrowfield. Given the above issues, it is requested that the Department of Infrastructure and Planning seek more information and clarification prior further consideration of this matter.
715.	- Agriculture - Air Quality - Economics - Noise - Social - Visual	Public United Pastoral	SIG14	The following are not included in this table: - Letter to Department of Planning and Infrastructure, Re: Drayton South Coal Project – Application No 11-0062 - Drayton South Coal Project Visual Impact Assessment – Impact to Arrowfield Property (Environment & Planning) - Acoustic Review of Noise Impact Assessment, Drayton South Coal Project – Application No 11-00662 (RCA Australia)

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				- Review of Air Quality Assessment – Dust Impacts, Drayton South Coal Project, NSW (RCA Australia) - Independent Review of Social Impact Assessment and Economic Impact Assessment, South Drayton Project (Lantz Marshall)
716.	Agriculture	Public Coolmore	SIG15	Executive Summary 1.1 Coolmore is a multi-million dollar thoroughbred breeding operation located west of Jerrys Plains in the Hunter Valley and is immediately adjacent to the Project Application boundary. Coolmore is located on approximately 8,500 acres of prime agricultural land which has been identified as 'strategic agricultural land – equine critical industry cluster' by the Strategic Regional Land Use Plan – Upper Hunter. 1.2 The international thoroughbred horse breeding studs are some of the most visually sensitive activities in the Hunter Valley. Of great importance to Coolmore is its reputation as an ideal environment for thoroughbred horse breeding, well removed from mining or heavy industrial activities. Visual amenity (along with clean air, clean water, quiet pastures, soil types and the topography of the region) is central to the presentation and operation of our business. Coolmore is highly sensitive to any impacts on our environment, especially in the context of coal mining and exploration activities.
717.	- Agriculture - Visual	Public Coolmore	SIG15	
718.	- Air Quality - Blasting - Economics - Groundwater - Noise - Regulatory and Planning Context - Surface Water - Visual	Public Coolmore	SIG15	1.3 The Project Application as described in the EA involves grossly unacceptable impacts to Coolmore in relation to visual intrusion, groundwater and surface water impacts, noise and vibration, and air quality. It is not appropriate for an open cut coal mine to be approved immediately adjacent to an existing, highly profitable and sensitive thoroughbred horse breeding operation and in this regard the Project Application is a clear example of inappropriate land use conflict. Further, the approval of the Project Application in its current form would be inconsistent with the legal and policy framework for project applications in respect of coal mining and related development in NSW.
719.	Visual	Public Coolmore	SIG15	1.4 The most critical visual impact of the Project is the construction of the Houston bund (over-burden dump). The Houston bund constitutes a monstrous intrusion into the immediate visual catchment of Coolmore's

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				operations. The bund is the length of two and a half Sydney Harbour Bridges, and the height between the Sydney Harbour Bridge platform and its peak. By any standards, this is an enormous, discordant visual feature, particularly considering that it is, in essence, an overburden dump masquerading as an environmental mitigation measure.
720.	Visual	Public Coolmore	SIG15	1.5 Coolmore were of the understanding that prior to the lodgement of the EA, the Department of Planning and Infrastructure directed Anglo to remove any visual intrusion in Coolmore's visual catchment area. It has therefore come as a great surprise to Coolmore that three options for the Houston Visual Bund (each with significant visual impacts) are in fact being proposed by the EA.
721.	- Stakeholder Consultation - Visual	Public Coolmore	SIG15	1.6 The proponent's consultation with Coolmore in relation to the bund has been totally inadequate. Following some preliminary work by our expert consultants, it appears that there is a feasible and less visually intrusive alternative available which we have entitled "Option 4". Coolmore notes that even if Option 4 is implemented, it would still object to the project in the strongest terms. However, if the project was to proceed, in Coolmore's view the implementation of Option 4 would operate to address (better than Option 3) the adverse visual impacts on Coolmore's operations.
722.	- Agriculture - Economics	Public Coolmore	SIG15	Coolmore's operations and the Hunter Valley Thoroughbred Industry 2.1 Coolmore is a multi-million dollar thoroughbred breeding operation located west of Jerrys Plains in the Hunter Valley and is part of the global Coolmore thoroughbred horse breeding and racing operation. Coolmore is one of the two largest and most successful thoroughbred horse breeders in the world. Coolmore has three global operations – Tipperary in Ireland, Kentucky in the USA and Jerrys Plains in Australia's Hunter Valley.
723.	- Agriculture - Economics	Public Coolmore	SIG15	2.2 Coolmore's operation in the Hunter Valley is a significant part of the global operation and an integral part of Australia's multi-billion dollar thoroughbred breeding industry.
724.	- Agriculture - Economics	Public Coolmore	SIG15	2.3 Coolmore Australia has been operating a premier thoroughbred horse stud at Jerrys Plains for more than 15 years. During that period, Coolmore has made significant capital investments in developing its Jerrys Plains property into one of the most impressive and successful thoroughbred breeding studs in Australia.
725.	Agriculture	Public	SIG15	2.4 The area of Coolmore's property is approximately 8,500 acres, classified as 'Strategic Agricultural Land –

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	Economics	Coolmore		Equine Cluster'. Over time, Coolmore has spent many tens of millions of dollars in capital improvements on land including buildings, irrigation systems, fences, dams, watercourses and other structures. At any time, it is estimated that the bloodstock present on Coolmore property is well in excess of \$100 million dollars and during certain times of the year, in excess of \$200 million dollars.
726.	- Agriculture - Social	Public Coolmore	SIG15	2.5 Coolmore is also a significant employer in the Hunter (employing up to 150 people and contributing to the employment of thousands more in the region). It is also a significant producer, domestic supplier and exporter of champion thoroughbreds and contributes to Australia's international reputation as a world class thoroughbred breeding and racing nation.
727.	Agriculture	Public Coolmore	SIG15	2.6 Coolmore has an internationally renowned reputation for producing champion thoroughbreds and currently stands many of Australia's current champion thoroughbred stallions including 2 time Champion Sire Encosta de Lago, Champion Sire of Australia Fastnet Rock, High Chaparral (sire of So You Think) and international champion racehorse So You Think. Other recent champions bred at the property include champion racehorses and Champion Sires Redoutes Choice and Fastnet Rock, champion racehorse Special Harmony and international champion racehorses and young sires Haradasun and Musir.
728.	Agriculture	Public Coolmore	SIG15	<u>Hunter Valley Thoroughbred Industry</u> 2.7 The Hunter Valley is home to the world's second largest concentration of thoroughbred breeding studs outside of Kentucky in the USA and is one of three global Centres of Thoroughbred Breeding Excellence (alongside Kentucky in the US and Newmarket in the UK).
729.	- Agriculture - Social	Public Coolmore	SIG15	2.8 The Thoroughbred Breeding Industry in the Hunter Valley is vertically integrated and interdependent. Not only is it Australia's largest domestic producer and exporter of premium thoroughbreds and a significant regional, state and national employer, it also supports a sophisticated infrastructure of network support industries (veterinarians, farriers, transport and feed companies) that would not be located in the Hunter Valley but for the presence of world scale and world class thoroughbred breeding operations.
730.	- Agriculture - Economics	Public Coolmore	SIG15	2.9 In 2006, a report commissioned by the Australian Racing Board estimated that the thoroughbred horse breeding and racing industry contributes more than A\$5 billion in value added to the national economy per annum.

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731.	Agriculture	Public Coolmore	SIG15	2.10 Further information about Coolmore and its operations can be obtained at http://www.coolmore.com/farm/australia/
732.	Regulatory and Planning Context	Public Coolmore	SIG15	Legal and policy background <u>Legislative provisions</u> 3.1 The Director-General's environmental assessment requirements were issued in respect of the Project Application on 3 August 2011. Under Schedule 6A clause 2 of the EP&A Act, the Project Application is classified as a 'Transitional Part 3A Project' because the Director-General's requirements were notified within 2 years of the Part 3A repeal date of 1 October 2011. Accordingly, Part 3A of the EP&A Act is to continue to apply to the assessment and determination of the Project Application.
733.	Regulatory and Planning Context	Public Coolmore	SIG15	3.2 Under Clause 12 of the Mining SEPP, before determining an application for consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must: "(a) consider: (i) the existing uses and approved uses of land in the vicinity of the development, and (ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and (iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and (b) evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a) (i) and (ii), and (c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a) (iii)."
734.	- Agriculture - Economics	Public Coolmore	SIG15	3.3 Coolmore is of the view that the existing thoroughbred breeding operations carried out on the Property are one of the 'preferred uses of land in the vicinity of the development' for the following reasons: (a) thoroughbred breeding is a long term land use. It is a sustainable, environmentally friendly industry that contributes greatly to the national and State economy; (b) As referred to above, Coolmore land has been mapped as 'Strategic Agricultural Land – Equine' and partly

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				'Strategic Agricultural Land – Biophysical' in the draft 'Strategic Regional Land Use Plan: Upper Hunter - Coal Resource and Strategic Agricultural Land' Map. This is a recognition of the strategic importance of Coolmore land by the State Government to the thoroughbred breeding industry.
735.	- Agriculture - Regulatory and Planning Context	Public Coolmore	SIG15	3.4 All State significant mining and petroleum proposals development applications on strategic agricultural land will require an 'agricultural impact statement' to be prepared and submitted as part of the environmental assessment process. The purpose of the statement would be to demonstrate that impacts on agricultural resources and industries are avoided or minimised to acceptable levels. The term "agricultural resources" is used to describe the land on which agriculture is dependent and the associated water resources (quality and quantity) that are linked to that land. Coolmore has significant concerns in relation to the Agricultural Impact Statement which are referred to in further detail below.
736.	Agriculture	Public Coolmore	SIG15	Policy statements of State Government re Strategic Agricultural Land and land use conflict 3.5 We welcome the Premier's acknowledgement that the Hunter Valley's Thoroughbred Breeding Industry is "nationally significant" and "world famous".
737.	Agriculture	Public Coolmore	SIG15	3.6 We also commend the Deputy Premier's comments that "if any proposed mining or gas extraction activity is likely to harm our prime agricultural land or other important rural industry clusters or the water resources associated with those areas, it will not go ahead under this government".
738.	- Agriculture - Regulatory and Planning Context	Public Coolmore	SIG15	3.7 Coolmore considers it relevant that the following additional statements have been made by current members of the State Government: (a) "A key part of the strategic land use planning process will be to identify strategic agricultural land and associated water and ensure that it is protected from the impacts of development." (Premier O'Farrell, NSW Liberals and Nationals Strategic Regional Land Use (SRLU) Policy 2011). (b) "Strategic agricultural land is a finite resource that must be conserved into the future to ensure future food security. It will be identified using a triple bottom line assessment of the environmental, social and economic characteristics of the area." (NSW Liberals and Nationals SRLU Policy 2011) (c) "Major mining and coal seam gas proposals on [high-quality agricultural] land will only be able to be considered if they are able to meet strict criteria as assessed by an independent panel of experts that will operate at arm's length from government." (Premier O'Farrell)

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				(d) "I can assure the member that we intend to protect all areas of high conservation value through the process that we are developing." (Minister Hazzard in Parliament, speaking on the Strategic Regional Land Use Policy, 25th November 2011).
739.	General	Public Coolmore	SIG15	<u>History of Project Application</u> 3.8 We wish to indicate to the Department the following relevant factors in relation to the assessment of the project thus far.
740.	Stakeholder Consultation	Public Coolmore	SIG15	3.9 Firstly, despite Anglo's repeated assertions that it has 'consulted with stakeholders' (assertions made frequently in the EA), Coolmore was not provided with an opportunity to comment on the Preliminary Environmental Assessment before it was submitted to the Department in 2011. This denied Coolmore the opportunity to be involved in important initial planning for the project. In Coolmore's view, the contentions made by Anglo that stakeholders have been involved throughout the mine plan process are to be treated with caution.
741.	Visual	Public Coolmore	SIG15	3.10 Secondly, Coolmore were of the understanding that prior to the lodgement of the EA, the Department of Planning and Infrastructure directed Anglo to remove any visual intrusion in Coolmore's visual catchment area. It has therefore come as a great surprise to Coolmore that three options for the Houston Visual Bund (each with significant visual impacts) are in fact being proposed by the EA.
742.	Agriculture	Public Coolmore	SIG15	<u>Recent applications</u> 3.11 The environmental impacts of coal mining on the thoroughbred horse breeding industry in the Hunter Valley have been recently considered by the Planning Assessment Commission (PAC). The PAC refused planning approval in respect of the Bickham Open Cut Mine at Scone in May 2010.
743.	Agriculture	Public Coolmore	SIG15	3.12 It is relevant to note that in relation to the impacts of coal mining on thoroughbred horse breeding operations, the Bickham Report prepared by the PAC made several points including: (a) the horse breeding industry in the Hunter is based on the international reputation that the Hunter has acquired for producing premium quality stock; (b) there is a strongly held view in the industry that this production capacity is based on key environmental attributes including clean air, clean water and green rolling hills; (c) the breeding companies in whose hands the top breeding stallions are concentrated are potentially

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				very mobile, and, should they decide to move, would move offshore; and (d) New Zealand is already making inroads into key export markets on the back of the Australian equine influenza outbreak and would seize on any other opportunities to weaken Australia's thoroughbred reputation.
744.	Agriculture	Public Coolmore	SIG15	3.13 The Bickham PAC Report concluded: <i>"The Commission's view is that the structure of the industry, the obvious importance of reputation, and the existence of viable alternatives makes the industry very vulnerable to threats based on image. The Commission accepts that introduction of coal mining to the Upper Hunter Valley could pose such a threat and that open-cut coal mining and a viable international thoroughbred breeding enterprise are probably incompatible land-uses. Given the size and importance of the thoroughbred industry, an experiment to 'test' the extent of this vulnerability is not recommended without a comprehensive study of both the economics and the risks."</i> <i>"The thoroughbred industry in the Upper Hunter Valley is a very significant contributor to the regional, state and national economies and a major source of employment. The structure of the industry makes it particularly vulnerable to threats based on image and the introduction of coal mining to the Upper Hunter Valley is strongly identified as such a threat. The available evidence supports the view that open-cut coal mining and a viable international-scale thoroughbred breeding enterprise are incompatible land-uses."</i>
745.	Agriculture	Public Coolmore	SIG15	3.14 The concerns raised by the PAC apply to open cut coal mining proposals such as the proposed Drayton South mine. This is particularly so considering that many of the major horse breeding operations affected by the Bickham project were located approximately 25km away. In this case, Coolmore is approximately less than 1km away from the project boundary and mining operations.
746.	General	Public Coolmore	SIG15	4 Merit issues with EA 4.1 Coolmore is of the view that the EA is manifestly deficient in its assessment of the environmental impacts proposed by the Drayton South Project. It is also of the view that the impacts described in the EA are unacceptable. We provide further detail below.
747.	Visual	Public Coolmore	SIG15	<u>Visual impacts</u> 4.2 The Drayton South coal mine, in particular, the Houston Pit and its associated over- burden dump (bund) proposes the transformation of an untouched natural valley into an industrial landscape with adverse visual

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				impacts on Coolmore, its clients, tourists travelling on the Golden Highway, the residents of Jerrys Plains and the 100 permanent residents that live on the Coolmore property.
748.	Visual	Public Coolmore	SIG15	4.3 The Visual Impact Assessment prepared by Hansen Bailey fails to adequately assess the importance of the visual impacts of the proposed Drayton South project on the Coolmore property, its sensitive business operations and its 100 permanently resident staff.
749.	Visual	Public Coolmore	SIG15	4.4 We have extracted the relevant statements in the EA in relation to the visual impacts of the Project on Coolmore's operations. Coolmore responds as follows: (a) <i>It is recognised that scenic and landscape diversity of the region form a resource base for tourism and associated agricultural pursuits such as viticulture and thoroughbred horse breeding (p 203).</i> Response: Coolmore agrees with this statement. The overall scenic value of the area to tourism and the local community must be given significant weight in the assessment of the Project Application. The highly scenic nature of the valley is immediately apparent to any visitor driving along the Golden Highway through this area. The Hunter River meanders through a green and lush river valley set within a backdrop of spectacular forested ranges to the south (the World Heritage listed Wollemi National Park) and an undulating ridgeline of grazing paddocks to the north. Visual amenity is a critical determining factor underpinning the concentration of thoroughbred breeding investment in the Hunter Valley region. The visual landscape setting is central to the presentation and operation of Coolmore's business and we are highly sensitive to any impacts on the visual environment, especially in the context of open cut mines.
750.	Visual	Public Coolmore	SIG15	(b) <i>The Coolmore Horse Stud presents irrigated grazing lands and distinctive timber post and rail fences and stockyards which, from the Golden Highway, creates an attractive rural landscape with high visual appeal (p 202);</i> Response: Coolmore is of the view that the property has a very high visual appeal. This view is supported by photographic evidence at Annexure B and the visual impacts report at Annexure C.
751.	Visual	Public Coolmore	SIG15	(c) <i>The visual impact assessment concluded that the visual impact on surrounding receivers will be limited for the majority of the mine life. This is because the operational areas of the Project have been designed to remain behind the existing topography in order to conceal them from views at the most sensitive locations to the south (p xiv).</i> Response: Coolmore disagrees with the conclusion of the visual impact assessment. As currently

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				proposed, the visual impact of the Project on Coolmore will be unreasonably high and significant for the majority of the mine life. This view is detailed below and is supported by the visual impacts report at Annexure C.
752.	Visual	Public Coolmore	SIG15	(d) <i>The exception is the views that will be available to the Houston Visual Bund while it is being constructed. The Houston Visual Bund is required to ensure that longer term views to the operational areas of the project are screened from view. Receivers located to the south of the project, including residences within Jerry's Plains, parts of Coolmore Stud and motorists on the Golden Highway would experience views of the Houston Visual Bund while it is being constructed. During this time (estimated 16 months) the visual impacts for these areas would be high. These impacts would be reduced as rehabilitation is completed (p xiv) (p 203).</i> Response: Coolmore is of the view that the visual impact of the Houston Bund represents significant and adverse visual intrusion. A 77m high emplacement of overburden (page 76) in the visual catchment area of Coolmore is a new, significant and unnatural feature in the landscape. The estimate of 16 months is conservative at best and in Coolmore's view it will take a significantly longer period for the bund to commence blending into the surroundings. It will remain a perpetual and irreversible impact in the visual catchment area. Accordingly, the Houston Bund will have an unreasonable impact on the presentation and operation of our business.
753.	- Stakeholder Consultation - Visual	Public Coolmore	SIG15	(e) <i>A visual bund will be constructed in the foreground of the Houston mining area to shield views of operations when the Houston and Whynot mining areas from receivers to the south. The Houston Visual Bund has been designed in consideration of feedback received as part of consultation with neighbouring stakeholders, particularly Coolmore Australia, through a series of working group meetings that have been ongoing in the planning phase of the project (p 76).</i> Response: As indicated in further detail below, Coolmore is of the view that the consultation that has been carried out by Anglo has been ineffective in reaching an appropriate solution to minimise visual impact issues. Anglo stated at a meeting with Coolmore on 27 February 2012 that they would not consider any further bund alternatives and that the proposed bund was their final and preferred option. Coolmore has commissioned John Dwyer, a mining engineer with 25 years experience to, to assess if alternative bund options could have been considered. John has concluded that there is another bund option which is far superior, does not involve the sterilisation of significant resources and yet may offer some mitigation of the visual impacts on Coolmore.

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754.	Visual	Public Coolmore	SIG15	(f) Once constructed, the Houston Visual Bund adds to the effect of the existing ridgeline in shielding views from all of the sensitive viewing locations on Coolmore Stud during the remaining years of the project (p 219). After this, visual impact will reduce to moderate and then low, reflecting decreasing visual effect levels (p 219). Response: It is difficult to understand how a pile of overburden can 'add to the effect of an existing ridgeline'. Coolmore is of the view that a 77m high emplacement of overburden in the visual catchment area of Coolmore is a new, significant and unnatural feature in the landscape. It will not have a moderate or low visual impact during the project. This view is supported by the visual impacts report at Annexure C.
755.	Visual	Public Coolmore	SIG15	(g) Tree screens have been established on the Golden Highway and will be planted along the ridgeline adjoining the Houston Visual Bund to minimise views of the project from various vantage points. These tree screens will be planted prior to and during the construction phase to allow for substantial growth and to maximise the opportunity for establishment (p 76). (h) Response: Coolmore is of the view that the tree screens are far too premature to significantly obscure views of the Project. This view is supported by the visual impacts report at Annexure C.
756.	Visual	Public Coolmore	SIG15	(i) Viewpoint DSO8 Batty Hill is of "high sensitivity, being a lookout point on the Coolmore Stud where visitors are taken for an overview of the property" (p 215). Response: It is extremely important to the presentation and business operation of Coolmore that adverse visual impacts are negligible from this viewpoint.
757.	Visual	Public Coolmore	SIG15	(j) The visual impact on Coolmore Stud is also limited (p 219) The project will not have a significant loss of scenic and landscape values (p 342). Response: For reasons outlined above and at Annexure C, these statements are inaccurate.
758.	Visual	Public Coolmore	SIG15	4.5 We also refer to figures 50 – 54 in the EA. We are of the view that the representation of the Houston visual bund is misleading in these figures. Clearly, a large 77m high overburden emplacement area will be a discordant figure in the landscape particularly during and immediately after construction. The representation of these emplacement areas (particularly the natural green colour during the years of construction) is clearly inaccurate and misleading in order to support the view that visual impacts are minimal.
759.	Visual	Public	SIG15	4.6 The critical findings of the Visual Impacts Report prepared by Michael Wright (visual impacts expert) and

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		Coolmore		provided at Annexure C are as follows: (a) The landscape to the West of Jerrys Plains village is currently untouched by mining. Rather, it is a highly scenic gateway to the Upper Hunter Valley comprising the immaculately maintained property of Coolmore Australia, the Hunter River and its irrigated floodplains and undulating hills and ridges. The Golden Highway, the main west/east road connecting Dubbo to Newcastle, runs through this impressive landscape;
760.	• Visual	Public Coolmore	SIG15	(b) The visual catchment for Coolmore is highly scenic; comprising the Hunter River and the adjoining irrigated floodplain meandering through undulating hills and ridges, with a forested mountain range, Wollemi National Park, to the south which creates a prominent and attractive backdrop to the area;
761.	• Visual	Public Coolmore	SIG15	(c) The high quality of this scenic landscape immediately south of the proposed mine site needs to be attributed with the highest levels of sensitivity when considering the visual impacts of the mine activities in the valley;
762.	• Visual	Public Coolmore	SIG15	(d) The visual quality of the landscape both in and around thoroughbred breeding studs is of paramount importance to the business model of this industry. Not only is the presence of highly productive land with good soils and ample water of fundamental importance to these studs, but the physical appearance of the property and the surrounding landscape is also a critical issue in the siting and ongoing operation of these businesses;
763.	• Visual	Public Coolmore	SIG15	(e) The presentation of the Coolmore stud is commensurate with its standing as one of the premier thoroughbred breeders in the world;
764.	• Visual	Public Coolmore	SIG15	(f) Coolmore is a highly sensitive visual environment, particularly in the context of an open cut mine. Coolmore's clients wish to see a property which has "nothing out of place". However an open cut mine anywhere within the property's viewshed, will most certainly be "out of place";
765.	• Visual	Public Coolmore	SIG15	(g) A large earth bund, 77 metres high and 1.75 kilometres long, is proposed to screen the open cut mine workings in the Houston Pit. During its construction and prior to the establishment of the vegetation, the bund will be continuously visible to a wide visual catchment in the alley over a 16 month period. The combination of the very high visual effect of coal mines and the very high visual sensitivity of the thoroughbred studs such as Coolmore, will inevitably result in a very high visual impact whenever the mining activities are visible;

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766.	Visual	Public Coolmore	SIG15	(h) The bund is the length of two and a half Sydney Harbour Bridges, and the height between the Sydney Harbour Bridge platform and its peak;
767.	Visual	Public Coolmore	SIG15	(i) The thoroughbred breeding industry and the open cut coal mining industry are potentially one of the most incompatible combinations of land uses to share a common landscape. The critical importance of the visual landscape to a thoroughbred breeding operation indicates that every possible measure to avoid the visual impacts of open cut mining needs to be implemented in order to ensure the ongoing viability of the property and its business; and
768.	Visual	Public Coolmore	SIG15	(j) Whilst it would not result in Coolmore supporting the project, the implementation of Option 4 as described in the report prepared by John Dwyer (consultant mining engineer) would significantly reduce the adverse impacts of the Houston bund.
769.	- Stakeholder Consultation - Visual	Public Coolmore	SIG15	4.7 Accordingly, Coolmore is of the view that the visual impacts associated with the Project Application are totally unacceptable and that Anglo have not adequately consulted with Coolmore in relation to the Houston Bund. As demonstrated at section 5 of this submission, following some preliminary work by our expert consultants, it appears that there is a feasible and less visually intrusive alternative available which we have entitled "Option 4". Coolmore notes that even if Option 4 is implemented, it would still object to the project in the strongest terms. However, if the project was to proceed, in Coolmore's view the implementation of Option 4 would operate to address (better than Option 3) the adverse visual impacts on Coolmore's operations.
770.	Groundwater	Public Coolmore	SIG15	<u>Groundwater</u> 4.8 A preliminary review of the EA carried out by Gilbert & Sutherland in relation to groundwater impacts has revealed several serious inadequacies in relation to the description of these impacts in the EA. We have extracted the relevant statements in the EA in relation to the impacts of the Project on groundwater. Coolmore's response is as follows: (a) <i>The alluvial deposits of the Hunter River located to the immediate south of the Drayton South area are a significant storage for groundwater, particularly within the basal gravel sequence and overlying sands...The Hunter River plays an important role in the operation of the region's mining and power generation industries and in irrigating Coolmore Stud and several other agricultural enterprises in the area (299).</i> Response: Coolmore agrees with these statements.

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771.	- Cumulative - Groundwater	Public Coolmore	SIG15	(b) <i>The zone of influence for the shallow regolith/alluvium is predicted to be restricted to the immediate vicinity surrounding the mining areas. This is a maximum distance of approximately 600 metres to the west and south of the mining areas in Year 27. The zone of influence is not predicted to extend into the Hunter River alluvial aquifer, however it is predicted to extend marginally into the Saddlers Creek alluvium (xix).</i> Response: The EA fails to acknowledge that groundwater impacts resulting from the proposal are likely to be compounded by the impacts from adjacent mining properties. The preliminary expert report prepared by Gilbert & Sutherland suggests that re-activation of Saddlers Pit at Mt Arthur Coal Mine is expected to influence groundwater levels in the Saddlers Creek alluvium.
772.	Groundwater	Public Coolmore	SIG15	(c) <i>The groundwater model predicts that inflows will vary throughout the mine life which is directly related to the design of the Mine Plan. As mining progresses and enters into a new strip, groundwater inflows will rise, followed by a gradual reduction in inflows (300).</i> Response: Coolmore is heavily reliant on groundwater for the irrigation of pastures and for the flow of groundwater into surface water bodies and in the vicinity of the property including a lagoon and the Hunter River. Any reduction of inflows are of great concern, representing a significant impact to Coolmore
773.	Groundwater	Public Coolmore	SIG15	(d) <i>Seepage flux of saline groundwater contained in coal measures can result in pockets of variably saline quality groundwater in the Hunter River alluvium (307).</i> Response: As indicated above, Coolmore is heavily reliant on groundwater. The production of saline groundwater is of great concern as it is likely to cause a significant groundwater impact.
774.	Groundwater	Public Coolmore	SIG15	(e) <i>The project is predicted to have only very limited leakage impacts on the alluvial lands associated with the Hunter River (xix). The groundwater quality within the Hunter River alluvium is not expected to measurably change as a result of the project (xix). Groundwater within the coal measures is predicted to continue to discharge into the Hunter River alluvium at a rate similar to pre-mining conditions. The project will not have any measurable impact on the Hunter River alluvial aquifer. Therefore the project will not result in impacts to highly productive groundwater (307).</i> Response: We are of the view that this conclusion is questionable given that the groundwater impact assessment at Annexure N of the EA states that the model is 'likely to underpredict the amount of upward leakage'. These two statements are difficult to reconcile.

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775.	Groundwater	Public Coolmore	SIG15	4.9 The preliminary expert report prepared by Gilbert & Sutherland makes the following relevant findings: (a) A Groundwater Numerical Model formed the basis upon which a groundwater impact assessment for the proposal and conclusions were founded in the EA. No independent peer review of the model is reported in the EA. There are a number of perceived deficiencies in the Groundwater Numerical Model that require justification or clarification before the results can be relied upon for any predictive purpose;
776.	- Cumulative - Groundwater	Public Coolmore	SIG15	(b) A crucial omission from the EA is a clear explanation of [the] model's integration with surrounding existing impacts. This is of particular importance given that there are cumulative impacts from existing operations at Drayton North. The EA fails to acknowledge that the groundwater impacts resulting from the proposal are likely to be compounded by the impacts from adjacent mining projects. Re- activation of Saddlers Pit at Mt Arthur Coal Mine is expected to influence groundwater levels in the Saddlers Creek alluvium.
777.	Groundwater	Public Coolmore	SIG15	(c) The baseline monitoring for this proposal has been insufficient. This is true both spatially and temporally, so much so that it compromises the model's treatment of ambient groundwater conditions including depressurisation, groundwater qualities and the quantification of leakage (both potential and actual) from the alluvial aquifers;
778.	Groundwater	Public Coolmore	SIG15	(d) The groundwater monitoring proposal does not clearly integrate and consolidate all of the disparate monitoring, including on adjacent leases, say, within the assessed impact radius of 4km. The water quality results should be assessed against the ANZECC Guidelines for Fresh and Marine Water Quality (2000), not the NHMRC Australian Drinking Water Guidelines (2004);
779.	Groundwater	Public Coolmore	SIG15	(e) A questionable outcome of the Groundwater Numerical Model is the prediction that the depressurisation zone will have "very limited leakage impacts" to the Hunter River alluvial aquifer, given that the report also states that the model is "likely to under-predict the amount of upward leakage" into the Hunter River alluvium. These two statements are difficult to reconcile; and
780.	- Groundwater - Stygofauna	Public Coolmore	SIG15	(f) The EA's inconsistencies in reporting and issues with sampling associated with stygofauna in groundwater are of concern. For Coolmore in particular, the proposal has the potential to reduce groundwater quality due to the removal of stygofauna.
781.	Groundwater	Public Coolmore	SIG15	4.10 As a result of these deficiencies, it is Coolmore's view that the EA is inadequate and does not properly take into account the groundwater impacts of the project on Coolmore's operations.

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782.	Surface Water	Public Coolmore	SIG15	<u>Surface water</u> 4.11 Coolmore is of the view that the EA is manifestly deficient in its assessment of the surface water impacts of the proposal. We have extracted the relevant statements in the EA in relation to the impacts of the Project on groundwater. Coolmore's response is as follows: (a) Figure 32 indicates that the discharge pipelines will be discharging water from the mine into the Hunter River directly adjacent to Coolmore's operations. Page 289 states that: "A water supply and discharge pipeline to the Hunter River, which will be linked to the Houston Dam. Water in excess of site use will be released directly to the Hunter River under the HRSTS via the discharge pipeline". Page 296 states "A pipeline outlet will be designed and constructed to minimise erosion of the Hunter River during releases and to prevent the build-up of debris carried by floodwater." Response: In Coolmore's view it is inappropriate for the discharge point to be located directly adjacent to Coolmore's operations. No consideration is given to the impacts of salinity to Coolmore, particularly during dry weather. In addition, unregulated flows would impact on Coolmore and the impacts on Coolmore and the surrounding environment are unknown.
783.	Surface Water	Public Coolmore	SIG15	(b) <i>The main mine water storages, including the mine access road dam, Savoy Dam, Houston Dam and South Void, will not spill over the life of the project (293).</i> Response: As indicated above, unregulated flows may impact on Coolmore (including overland flow) however the impacts on Coolmore and the surrounding environment are unknown and are not discussed by the EA in any detail. Such unregulated flows could have an adverse impact on Coolmore's operations.
784.	Surface Water	Public Coolmore	SIG15	4.12 The critical findings of the preliminary surface water report prepared by Gilbert & Sutherland are as follows: (a) The reported water balance modelling fails to provide justifiable bases for the conclusions drawn in the report. The probabilistic values reported are not statistically valid and the forms of analyses are potentially misleading. The values reported do not support the interpretation of the results provided;
785.	Surface Water	Public Coolmore	SIG15	(b) None of the runoff and recharge parameters of water quality assumptions adopted within water balance modelling were subjected to meaningful sensitivity testing. Without these sensitivity analyses, the relative effects of individual parameters remains unknown;

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786.	Surface Water	Public Coolmore	SIG15	(c) In terms of mine water management, the design of the dirty water system (i.e. surface water runoff from areas that are disturbed by mining operations, such as overburden and haul roads) relies on the discharge of captured water wherever possible, on the basis of water quality. These captured waters and their associated water quality criteria are problematic when both storages and criteria are exceeded;
787.	Surface Water	Public Coolmore	SIG15	(d) The EA states that <i>"runoff must be managed to ensure that downstream water quality is within the adopted water quality compliance criteria"</i> , yet fails to define one specific discharge criterion, relying on licence conditions.
788.	- Groundwater - Surface Water	Public Coolmore	SIG15	(e) The potential implications for the long-term impacts of this salinity on the Hunter River and other water users (of both surface water and groundwater) in the area are also unknown;
789.	Surface Water	Public Coolmore	SIG15	(f) The EA's discussion of licensed water users or <i>"basic landholder rights"</i> is limited to the selected quoting of various sums of water from the Water Sharing Plan. No consideration is given to those water users that may be impacted, nor does the EA indicate the location of characteristics of any potentially impacted users, enterprises or sensitive receiving environments. These users clearly include Coolmore;
790.	Surface Water	Public Coolmore	SIG15	(g) the EA fails to discuss the relative values of the local watercourses from commercial, aesthetic and ecological perspectives. In respect of the requirement to obtain unregulated water access licences as a result of the proposal, the EA is vague.
791.	Surface Water	Public Coolmore	SIG15	(h) the information is so lacking in the EA that the potential interception of overland flow, the potential impacts on the existing unregulated river access and the effects on the proposal of not securing the requisite licences are simply not considered to any meaningful degree.
792.	Surface Water	Public Coolmore	SIG15	4.13 As a result of these issues, it is Coolmore's view that the EA does not properly take into account the surface water impacts of the project, or relate them to Coolmore's operations
793.	- Blasting - Equine Health - Human Health	Public Coolmore	SIG15	<u>Noise, blasting and vibration</u> 4.14 Coolmore notes that 5 blasts per week would be required to support the proposed production rate of the project. That equates to almost a blast every weekday. For thoroughbred breeding studs located directly opposite this proposed coal mine, and the communities of people and families who live on those studs, and the valuable livestock on these properties this continual process of blasting will be highly intrusive, damaging

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				and plainly an untenable situation to endure for any period of time.
794.	- Blasting - Equine Health - Human Health	Public Coolmore	SIG15	4.15 The implication in the EA that either people or livestock would or should become desensitised to blasting and vibration over time is flawed. It represents a cavalier attitude to what the communities of people residing close to this mine should be expected to tolerate and live with.
795.	Noise	Public Coolmore	SIG15	4.16 We have extracted the relevant statements in the EA in relation to the impacts of the Project in relation to noise, blasting and vibration. Coolmore's response is as follows: (a) <i>There are nine Drayton Mine receivers that will experience mild noise impacts at residences and one receiver that will experience mild noise impacts over an area greater than 25% of the property (x);</i> Response: The EA should (but does not) expressly indicate that Coolmore is the relevant receiver that will experience these noise impacts. Noise impacts over an area greater than 25% of the property are of concern to Coolmore. There is the potential for disturbance to thoroughbreds, particularly during the sensitive breeding stage. Noise impacts are also inconsistent with our business operations and would be extremely inappropriate during client visits.
796.	- Equine Health - Noise	Public Coolmore	SIG15	(b) <i>The noise impact assessment determined that noise levels will not exceed 40dBA on any part of Coolmore Stud (xiii). It was determined from the literature review that horses exposed to noise levels in the range of 54 to 70 dBA would be unlikely to exhibit signs of distress (xii).</i> Response: It is relevant to note that the literature review referred to was not independent or based on any peer reviewed scientific research. We are of the view that noise levels in the range of 54 to 70 dBA are also inconsistent with our business operations and would be extremely inappropriate during client visits.
797.	- Blasting - Equine Health	Public Coolmore	SIG15	(c) <i>Overpressure levels from blasting (when closest to the receiver) are predicted in the range of 93 to 109 dBL for indicative locations on Coolmore Stud (xiii). As mining progresses southwards it is likely that horses will have developed an increased tolerance to blasting due to habitation;</i> Response: We are of the view that overpressure levels from blasting (when closest to the receiver) which are predicted in the range of 93 to 109 dBL are also inconsistent with our business operations. No evidence is provided that horses will develop an increased tolerance to blasting over time, nor is this an acceptable assumption. In addition, overpressure levels from blasting would be extremely inappropriate during client visits.

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798.	- Blasting - Equine Health - Noise	Public Coolmore	SIG15	(d) <i>Some activities, including blasting and the operation of particular equipment on exposed surfaces will be constrained to daylight hours to avoid adverse noise and vibration impacts as required. Blasting in particular will only be undertaken during the hours of 9am to 5pm on Monday to Saturday inclusive (84).</i> Response: as referred to above, our business operation and thoroughbred horses are highly sensitive to noise and vibration and our clients and visitors to Coolmore are highly sensitive to the quality of setting of the Coolmore establishment. The noise and vibration impacts caused by blasting (and the operation of equipment) is unacceptable to Coolmore, particularly during daylight hours.
799.	Blasting	Public Coolmore	SIG15	(e) <i>Anglo-American will consult with the neighbouring mines to ensure that blast events from adjoining operations would not occur simultaneously (199).</i> Response: in Coolmore's view, any significant blasting impacts are unacceptable and will result in serious impact on the business.
800.	- Equine Health - Noise	Public Coolmore	SIG15	(f) <i>The horses exhibited little response to the music noise, except where the noise was of an alarming character or accompanied by visual stimuli (204).</i> Response: this statement should be treated with caution because it relates to the impacts of music on racehorses and livestock. Further, any conclusions need to have a sound evidentiary basis and be grounded in scientifically based research rather than anecdotal material.
801.	- Blasting - Noise	Public Coolmore	SIG15	(g) <i>Noise levels will not exceed 40dBA on any part of Coolmore Stud. For the majority of these properties, noise levels of 30 to 33dBA are predicted, which is comparable to the measured background noise level (206)... Overpressure levels from blasting are predicted in the range of 93 to 108dBL for indicative locations on Coolmore Stud (206).</i> Response: as referred to above, clients and visitors to Coolmore are highly sensitive to the quality of setting of the Coolmore establishment. The estimated noise and blasting impacts will be clearly perceivable beyond background levels and are of particular concern during daylight hours.
802.	Noise	Public Coolmore	SIG15	4.17 The critical findings of the preliminary report prepared by Bridges Acoustic are that the Drayton South EA:
803.	Noise	Public	SIG15	(i) does not adequately address worst case noise assessment scenarios, (ii) fails to assess actual noise exposure at affected receiver locations for rail noise assessment,

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804.	Noise	Public Coolmore	SIG15	(iii) factors in approvals for noise levels on rail which should not be included an could have potential impacts on noise exceedences;
805.	- Blasting - Equine Health	Public Coolmore	SIG15	(iv) excludes any assessment of blasting overpressure on horses (despite acknowledging in the EA that at its peak noise levels would generally be considered unsettling for horses);
806.	- Blasting - Equine Health	Public Coolmore	SIG15	(v) is based on an "assimilation" of a gradual increase of noise over time which should not be relied upon as the basis for acceptability of response to blasting overpressure noise.
807.	Noise	Public Coolmore	SIG15	4.18 It is Coolmore's opinion that the EA does not properly take into account the noise impacts of the project. Those impacts that are described are unreasonably adverse and
808.	- Air Quality - Equine Health	Public Coolmore	SIG15	<u>Dust and equine health</u> 4.19 Coolmore is disappointed that the assertions made in the EA regarding dust and equine health are not supported by any independent, peer reviewed research and appear to be assertions based on anecdotal evidence and first person observations by consultants employed by the proponent. The literature review relates to studies of hay dust on thoroughbreds and does not relate to dust emanating from soil. Accordingly, it is Coolmore's view that the findings in the EA are to be treated with caution and do not meet the requirements in the DGRs.
809.	Air Quality	Public Coolmore	SIG15	4.20 We have extracted the relevant statements in the EA in relation to the impacts of the Project in relation to dust. Coolmore's response is as follows: (a) <i>The air quality assessment found that the average cumulative PM10 concentrations resulting from the Project will meet the regulatory criteria of 30ug/m3 at all locations on the Coolmore Stud. Even under a worst case scenario when considering the maximum predicted 24 hour average, the predicted levels will reach 52ug/m3 for one day in Year 10 at Coolmore (xii) (204)</i> Response: air quality is a significant issue for Coolmore. Recent reports published in the Newcastle Herald found that there had been over 200 air quality breaches of national and international air quality standards in 2012. The estimated levels of increased dust resulting from the project are of concern to Coolmore. The lack of TSP and PM10 records raise serious doubts as to the veracity of the findings in the EA.

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810.	- Air Quality - Equine Health	Public Coolmore	SIG15	(b) <i>Particulate matter is 'merely an irritant' (xii)</i> Response: the finding that particulate matter is 'merely an irritant' to thoroughbreds does not have a sound evidentiary basis and is not grounded in scientifically based research. Considering the value of Coolmore's breeding operations to the local and State economy, any proposed additional impacts to the respiratory systems of our stock must be supported by independent, peer reviewed research.
811.	Air Quality	Public Coolmore	SIG15	(c) <i>The results from the dispersion modelling indicate that the project considered alone (and cumulatively with other sources) is predicted to contribute to exceedances of the annual PM10 and TSP air quality criteria at the receivers summarised in Table 31... Private receivers that are predicted to experience exceedances of the assessment criterion over the life of the project are shown in Table 31 (167).</i> Response: Two of the receivers indicated in table 31 are on Coolmore property. Considering the sensitivity of Coolmore's operations, this information should have been made expressly clear at page 167, and otherwise appears to be deliberate obfuscation. It is also worth noting that the proponent's own modelling predicts air quality exceedances on Coolmore land.
812.	- Air Quality - Equine Health	Public Coolmore	SIG15	(d) <i>There was very little published information about the equine health impacts of dust originating from the soil (200).</i> Response: Considering that the dust emanated by the project is from the soil, it is difficult to determine the utility of a literature review carried out by the proponent that does not deal with soil related dust.
813.	- Air Quality - Equine Health	Public Coolmore	SIG15	(e) <i>Despite exposure to high levels of dust, horses can compete to the best of their ability.</i> Response: This conclusion is not based on research relating to dust from soil. The literature review does not account for the effects of dust on overall health of horses, nor does the literature review deal with the increase in dust and the ramifications for our sensitive business operations.
814.	- Air Quality - Equine Health	Public Coolmore	SIG15	(f) <i>Dust that does not have high levels of endotoxin does not appear to increase the incidence of inflammatory airway disease in horses.</i> Response: Again, this conclusion is highly questionable and should be treated with caution because it is not based on research relating to dust from soil.
815.	- Equine Health - Visual	Public Coolmore	SIG15	4.21 Some of the critical findings of the preliminary report prepared by our expert Dr Andrew Paxton-Hall, Veterinarian, are: (a) Extraneous light is a potential environmental issue for breeding equines. Light of sufficient strength

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				and duration could affect breeding animals if not controlled;
816.	- Air Quality - Equine Health	Public Coolmore	SIG15	(b) Foals' susceptibility to dust of all types needs to be established, especially in a paddock situation, as research is limited. Many of the animals on a breeding property are foals;
817.	- Blasting - Equine Health - Noise	Public Coolmore	SIG15	(c) Noise and vibration from mining could affect horses. Horses may be susceptible to explosion noise. Given that the equine population on a breeding stud is fluid, assumptions regarding desensitisation over time to mining effects may be just that and individual differences may be an issue.
818.	- Air Quality - Equine Health	Public Coolmore	SIG15	4.22 Considering the value of our bloodstock and the time spent by the proponent planning the project, the failure to carry out a proper study in relation to the effects of soil dust on thoroughbreds is unacceptable.
819.	Agriculture	Public Coolmore	SIG15	<u>Agricultural and economic impact</u> 4.23 The Agricultural Impact Statement prepared by the proponent is manifestly inadequate and does not consider, in any meaningful way, the impacts of the project on 'Strategic Agricultural Land – Equine Cluster,' the area of land that Coolmore falls within.
820.	- Agriculture - Economics	Public Coolmore	SIG15	4.24 We have extracted the relevant statements in the EA in relation to the impacts of the Project on agricultural land and the local economy. Coolmore's response is as follows: (a) <i>The predominant agricultural land use within the Drayton South area is extensive beef cattle grazing, with the major enterprise being beef cattle breeding for the weaner and domestic market. Several other agricultural enterprises operate within the locality of the Drayton South area, including Coolmore Stud (xxi)</i> Response: In terms of economic value and land use, the predominant agricultural use in the area of the mine is clearly thoroughbred horse breeding, indicated by the two multi-million dollar breeding operations within 1km of the project boundary (Coolmore and Darley). Any suggestion otherwise is fundamentally misinformed at best, and at worst deliberately misleading.
821.	- Agriculture - Economics	Public Coolmore	SIG15	(b) <i>The gross value of current agricultural production within the Drayton South area is \$701,208 per annum and the net value is \$432,479 per annum (xxi)</i> Response: this finding may be correct within the Drayton South project area footprint, but it does not take into account the gross value of agricultural activities on nearby thoroughbred horse breeding

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				operations such as Coolmore. Indeed, the entire agricultural impact statement ignores this issue.
822.	- Agriculture - Visual	Public Coolmore	SIG15	(c) <i>The project is not anticipated to have significant impacts on availability of land for agricultural purposes, including land utilised by the thoroughbred horse breeding industry and biophysical strategic agricultural land, water supply including highly productive groundwater, long-term visual amenity of surrounding enterprises (xxii).</i> Response: Coolmore strongly disagrees with and challenges this finding. This comment demonstrates that the author of the report does not understand the impact the project will have on Coolmore in terms of visual impacts, reputation, and operations.
823.	- Agriculture - Economics	Public Coolmore	SIG15	(d) <i>Assess the current and maximum agricultural potential for each agricultural domain in terms of the quantum, gross value and net value of production</i> Response: the agricultural impact statement does not assess the economic value of the breeding activities carried out by Coolmore and is therefore fundamentally flawed.
824.	- Agriculture - Visual	Public Coolmore	SIG15	(e) <i>The project will not lead to significant impacts on the equine and viticulture CIC through a loss of scenic and landscape values. The visual impacts associated with the project on sensitive receivers to the south will be relatively short-term in nature, with all major project components including mining areas and OEAs being designed to remain behind the existing southern ridgeline and out of view.</i> Response: Coolmore strongly disagrees with and challenges this finding. The placement of overburden on the southern ridgeline (referred to by the proponent as the Houston visual bund and associated works) will be clearly visible during construction and will have permanent and irreversible impacts on the visual amenity and reputation of Coolmore. The southern ridgeline will be permanently altered.
825.	Agriculture	Public Coolmore	SIG15	4.25 The Agricultural Impact Statement contained in the EA was reviewed by Dr Phil Matthew, Principal Agricultural Scientist at Gilbert & Sutherland. This report found that the agricultural impact statement is inadequate having regard to the formal requirements as published in the Guideline for Agricultural Impact Statement published by the Department of Planning and Infrastructure (March 2012). This is because: (a) the focus of the agricultural impacts is on the site itself and the offset site, with a cursory examination of the surrounding properties and consequently the report fails to meaningfully address the issues that should be addressed.

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826.	- Agriculture - Groundwater - Soil and Land Capability - Surface Water	Public Coolmore	SIG15	(b) the report does not comply with the requirements of an agricultural impact statement, for example it does not contain: (i) any analysis of Coolmore's operations; (ii) a detailed description of soil characteristics including soil types and depth; (iii) a description of water resources and other users extraction locations; or (iv) project alternatives for mine design.
827.	- Agriculture - Economics	Public Coolmore	SIG15	(c) the economic analysis does not address the impacts on the neighbouring farms with most of the assessment based on the site and the off-set site.
828.	Agriculture	Public Coolmore	SIG15	4.26 As a result of these deficiencies, it is Coolmore's view that the EA does not properly take into account the impacts of the project on Coolmore's operations.
829.	- Stakeholder Consultation - Visual	Public Coolmore	SIG15	<u>Consultation</u> 4.27 The EA refers to "ongoing communication between parties" and the "provision of an opportunity for stakeholders to have input into the planning of the project" (viii). It also makes the following additional relevant comments: (a) <i>Anglo-American will also conduct ongoing consultation with stakeholders surrounding the site over the life of the project. Should any issues arise in relation to visual impacts on surrounding sensitive viewing locations, these will be addressed through consultation with relevant parties (xiv).</i> Response: As indicated by the report prepared by John Dwyer and provided at Annexure D, whilst it is not satisfactory, there is a clearly superior solution available to the proponent in terms of the Houston visual bund. It is Coolmore's considered opinion that consultation is incomplete on this issue.
830.	- Visual - Mine Plan Justification	Public Coolmore	SIG15	(b) <i>The Mine Plan for the Drayton South area has been developed with consideration to the existing environment and key local stakeholders seeking to minimise, as far as practicable, the visibility of the mine from neighbouring properties (45)</i> Response: Coolmore is of the view that this statement is misleading. The Houston visual bund does not minimise (as far as practicable) the visibility of the mine from neighbouring properties

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				because there is a far superior solution as indicated at annexure D.
831.	- Stakeholder Consultation - Visual - Mine Plan Justification	Public Coolmore	SIG15	(c) <i>One of Anglo-American's key objectives when developing the Mine Plan for the project was to reduce the visual impacts of the mine on sensitive receivers located to the immediate south including Coolmore Australia, Darley Australia, the existing Arrowfield Estate and the village of Jerry's Plains. The preferred location and design of the visual bund was then developed following consideration of stakeholder feedback (104)</i> Response: It is Coolmore's considered opinion that consultation is incomplete on this issue.
832.	- Stakeholder Consultation - Visual	Public Coolmore	SIG15	4.28) In light of the above, it is clear that the consultation on the part of the proponent with surrounding stakeholders has been inadequate. It is Coolmore's view that the proponent should be directed to amend the design of the Houston visual bund in order to entirely shield and protect Coolmore's operations from unacceptable visual impacts, including those of their over-burden dump.
833.	Agriculture	Public Coolmore	SIG15	<u>Land Use</u> 4.29 The EA makes general assertions about the historic land use in the vicinity of the project application boundary. It is Coolmore's view that the below statement requires correction: (a) <i>"Prior to the emergence of Coolmore Australia and Darley Australia in the region, there were existing coal mining operations at Drayton Mine, Mt Arthur Coal Mine, Hunter Valley Operations Coal Mine and Wambo Coal Mine, as well as operations at the Bayswater and Liddell Power Stations (12)."</i> Response: this statement is deliberately misleading. Thoroughbred horse breeding has been carried out on Coolmore land since the 1900's. The property has a long history of successful thoroughbred horse breeding prior to its more recent ownership by the Arrowfield Group in 1986 and later Coolmore Australia. Between 1910 and 1924, the property was owned by the Moses Brothers. During their tenancy, a number of quality thoroughbred racehorses were bred by the Moses Brothers at the property including the great racehorse and Champion sire Heroic, as well as Melbourne Cup winner Poitrel. The Drayton South Project is the first major intrusion of coal mining operations into the direct vicinity of Coolmore land. The Drayton Mine, Mt Arthur Coal Mine, Hunter Valley Operations Coal Mine and Wambo Coal mines are several kilometres away, well outside the visual and noise catchment of Coolmore.

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834.	Visual	Public Coolmore	SIG15	Mitigation of impacts 5.1 In Coolmore's view, there are measures that should have sensibly been incorporated into the mine design in order to minimise impacts on surrounding receivers. It is indicative of the overall deficiencies in the EA that these measures have not been incorporated by the proponent. One example is "Option 4" for the Houston visual bund. In any event, Coolmore wishes to note that the incorporation of the measures described below would not produce a satisfactory outcome for Coolmore. However, implementation of Option 4 would reduce adverse impacts on Coolmore's operations to a significant extent.
835.	Visual	Public Coolmore	SIG15	<u>Visual impacts</u> 5.2 Annexure D contains a report prepared by John Dwyer, a mining engineer employed in the mineral and coal industry for over 40 years. It indicates the unsatisfactory nature of the consultation between Coolmore and Anglo and describes an alternative, potential bund location and a further option, (Option 4) which has been developed by Coolmore.
836.	Visual	Public Coolmore	SIG15	5.3 Coolmore considers that Option 4 is a vast improvement on the visual bund options presented in the EA. Option 4 has the following characteristics in comparison to Option 3 (the current design in the EA): (a) a similar height (72m versus 77m); (b) a substantially smaller footprint and volume; (c) a much shorter timeframe during which critical visual impacts are evident; (d) a minimal reduction of strike length available for high wall mining and does not sterilise large amounts of coal (estimated at less than 1% overall for the project).
837.	- Visual - Mine Plan Justification	Public Coolmore	SIG15	5.4 Considering the statement in the EA that primary objective of the proponent "was to develop a mine plan that minimised potential environmental and social impacts while maximising resource recovery and operational efficiency," it is imperative that amendments to the mine plan are made. It is Coolmore's view that Option 4 is a more environmentally sensitive and economically efficient alternative.
838.	Visual	Public Coolmore	SIG15	5.5 Coolmore requests the Department of Planning and Infrastructure to direct Anglo to investigate Option 4 as an alternative to the Houston Bund designs in the EA. It is a substantial improvement for the Houston pit bund design and should be adopted by AAMC before any further detailed mine planning is embarked upon.
839.	Groundwater	Public Coolmore	SIG15	<u>Ground and surface water</u> 5.6 As noted above, the EA is deficient in its assessment of the surface and ground water impacts of the

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	Surface Water			proposal. In order for the ground and surface water impacts to be acceptable to Coolmore, the proponent must demonstrate that: (a) the risks associated with this proposal are not unacceptably high, (b) the impacts have been adequately assessed, and (c) the impacts have known and acceptable consequences for the Hunter Valley's already highly stressed water systems.
840.	- Blasting - Noise	Public Coolmore	SIG15	<u>Noise and blasting</u> 5.7 We have described above the business model and sensitive operations carried out at Coolmore. In order for the noise and blasting impacts to be acceptable to Coolmore, the proponent must demonstrate that that the Drayton South Project involves no measurable increase in background noise levels
841.	Air Quality	Public Coolmore	SIG15	<u>Dust</u> 5.8 We have noted above our concerns in relation to dust and equine health. In order for these impacts to be acceptable to Coolmore, the proponent must demonstrate that that the Drayton South Project involves no measurable increase in background dust levels. Coolmore objects to the Drayton South Project because the EA is manifestly deficient in its assessment of environmental impacts, and the impacts described are unacceptable for a highly sensitive, multi-million dollar thoroughbred horse breeding operation to have to contend with. We trust the Department of Planning and Infrastructure will require the proponent to amend the project before it is assessed any further.
842.	Visual	Public Coolmore	SIG15	The following are not included in this table: Attachment: Commentary on Drayton South Coal Project Visual Impact Assessment Working Paper (Michael Wright)
843.	Agriculture	Public Darley	SIG16	Darley's Woodlands Stud (Woodlands) is located on the Golden Highway between Denman and Jerrys Plains. Woodlands is situated on strategic agricultural land in the equine critical cluster in the Upper Hunter Valley.
844.	- Agriculture - Economics - Social	Public Darley	SIG16	The Drayton South open cut coal mine is located 500 metres from Woodlands' doorstep. The proposed Drayton South open cut coal mine will have a mine life of 27 years and will utilise open cut and highwall mining techniques to extract up to 7 million tonnes per annum over this 27 year period.

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				Darley is strongly opposed to the Drayton South open cut coal mine proposal. We consider that the risks associated with this project to our business, employees, community and the environment are unacceptably high and the impacts on our future and landscape are critical and irreversible. Darley asserts that no reasonable person would choose to acquire, invest in, upgrade or operate a thoroughbred breeding business in such close proximity to a coal mine. It follows that mining and thoroughbred breeding in such close proximity are incompatible land uses. Should the Drayton South open cut coal mine proceed Darley will be forced to reconsider its commitment to its operations in NSW due to the nature and scale of the impacts of this proposal on our business. Darley notes and supports the Hunter Thoroughbred Breeders Association submission opposing Anglo American's proposal for an open cut coal mine which is located directly opposite Darley's international scale Woodland operations at Denman in the Hunter Valley.
845.	- Agriculture - Economics - Social	Public Darley	SIG16	Darley Australia Darley is HH Sheikh Mohammed bin Rashid Al Maktoum's global breeding business which operates in six countries around the world, including Australia's Hunter Valley, Newmarket in the UK, County Kildare in Ireland, Kentucky USA and Hokkaido, Japan and more recently China. HH Sheikh Mohammed is ruler of Dubai and Vice President of the United Arab Emirates. Darley established its commercial breeding operation in the Hunter Valley in 2001 in recognition of Australia's growing force in international thoroughbred breeding and racing. In 2003 Darley Australia purchased the 1,700 acre Kelvinside Stud in Aberdeen in the Hunter Valley. The property has since been developed into a world-class facility with capacity to stand 18 stallions, comprehensive mare and yearling facilities and more recently a world class education and breaking operation. In 2008 Darley purchased Australia's largest integrated breeding and racing operation, Ingham Bloodstock, which included the 6,500 acre Woodlands Stud at Denman. In addition to its Hunter Valley farms Darley operates a Victorian breeding operation from its stud Northwood Park, at Seymour Victoria. Darley also owns and races in excess of 500 horses from its two training bases in Western Sydney and

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				Victorian training base at Flemington racecourse in Melbourne, Victoria. It is estimated that Darley's ownership of elite thoroughbred racehorses amounts to approximately 10 per cent of all racehorses competing in metropolitan Sydney. Darley employs 350 people in Australia, including 150 in the Hunter Valley across its two stud farms. These include horse handlers, bloodstock experts, gardeners, and others working in corporate functions including administration, finance, human resources, IT, and marketing and sales. During the Southern Hemisphere breeding season the value of bloodstock under Darley's stewardship is in the order of \$500 million, with in excess of \$350 million located in the Hunter Valley. Woodlands was settled in 1824 and it is believed that the current homestead was built in 1833. Woodlands' first recorded association with thoroughbreds dates back to the 1870's under the ownership of H.C. White, who bred and raced thoroughbreds, the most prominent of which was dual Caulfield Cup winner Paris in 1892 and 1893. Since then it has been operated as a thoroughbred stud by notable industry participants including George Ryder (founder of the Golden Slipper), Lord Derby and the Ingham brothers. Champion Sires that have graced Woodlands include Yeats, Canny Lad and Lonhro. Champion racehorses reared at Woodlands include Octagonal, Golden Slipper winner Marscay, and notably the last 2 Golden Slipper winners and Champion 3 year olds Pierro and Sepoy. Darley's Woodlands Stud remains one of two international scale thoroughbred breeding operations in the Jerrys Plains/Denman area in the Hunter Valley. It is one of over 150 thoroughbred breeding farms and supplier companies located in the Hunter Valley's critical concentration of thoroughbred breeding and support operations. The industry in the Hunter Valley employs thousands of people directly and indirectly (including the largest equine veterinary hospital in the Southern Hemisphere, farriers, saddlers, printers, equine transport industries, the racing industry) and contributes to the employment of hundreds of thousands of people across its value chain.
846.	- Groundwater - Surface Water	Public Darley	SIG16	Shortcomings in the EA Darley is strongly opposed to the Drayton South open cut coal mine proposal. Darley concurs with the HTBA's assessment that the EA: is manifestly deficient in its assessment of the surface and ground water impacts of the proposal. We

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				agree that the water risks associated with the Drayton South proposal are unacceptably high, are not adequately assessed, and may have unknown consequences for the Hunter Valley's already highly stressed water systems for hundreds of years after mining has ceased;
847.	Agriculture	Public Darley	SIG16	fails to assess the impact of this proposed open cut coal mine on the Hunter Valley's thoroughbred breeding industry as required by the Agricultural Impact Statement;
848.	- Agriculture - Economics	Public Darley	SIG16	fails to assess the impact of this proposed open cut coal mine on the Hunter Valley's thoroughbred breeding industry in the economic impact assessment.
849.	Economics	Public Darley	SIG16	Overstates the economic benefits of the project and understates the costs which if corrected could materially alter, if not reverse, the proposal's net economic benefits;
850.	- Economics - Social	Public Darley	SIG16	fails to adequately assess the impact of the Drayton South open cut coal mine on the Hunter Valley's thoroughbred breeding industry and community in the socio-economic impact assessment;
851.	- Agriculture - Economics - Social	Public Darley	SIG16	will materially and adversely impact the productivity and investment attractiveness of the Hunter Valley studs located within 1km of this project, and the entire thoroughbred breeding and support industries concentrated in the Hunter Valley;
852.	Agriculture	Public Darley	SIG16	ignores the incompatibility of landuses
853.	- Agriculture - Social	Public Darley	SIG16	underestimates the long term social costs from an open cut coal mine with a finite life compared to sustainable thoroughbred breeding industry and other agriculture that could operate in perpetuity;
854.	Air Quality	Public Darley	SIG16	reveals serious deficiencies in the air quality analysis;
855.	Visual	Public Darley	SIG16	presents unacceptably high visual risks which will irreversibly alter the Hunter Valley landscape and topography. The visual impact of this proposed mine will be evident for over two decades.
856.	- Cumulative - Human Health	Public Darley	SIG16	fails to address and account for the cumulative health impacts of this proposal on the Hunter Valley community;
857.	Equine Health	Public Darley	SIG16	presents information on horse health that is incorrect or has little relevance to the majority of horses in the

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				Hunter Valley region;
858.	Traffic and Transport	Public Darley	SIG16	does not adequately address the road safety impacts of the Project;
859.	General	Public Darley	SIG16	fails to adequately address the broader and often interrelated impacts of the proposal. This is a recurring problem throughout the EA (including its appended reports);
860.	- Cumulative - Social	Public Darley	SIG16	systematically fails to acknowledge and assess the cumulative impacts of existing mines together with this proposal on the local community and sustainable business operations.
861.	Agriculture	Public Darley	SIG16	Impact of Drayton South Open Cut Coal Mine Proposal on Darley's Business Darley asserts that no reasonable person would choose to acquire, invest in, upgrade or operate a thoroughbred breeding business in such close proximity to a coal mine. The EA fails to take account of this, and more specifically: - fails to account for the negative impact the proximity of this open cut coal mine (500m from Darley's boundary) will have to Darley's Woodlands operations; - fails to address the significant adverse visual impact the mine will have on Darley's business operations, reputation, development potential and future investment decisions; - fails to deliver on Anglo American's commitment that there will be no visual impact resulting from this open cut coal mine on our operations; - fails to recognise the negative health and welfare impacts this proposal will have on the community of people who reside on the Darley property; - totally disregards the significant social, agricultural and economic impact the open cut coal mine will have on our thoroughbred breeding operations and our industry as a whole; - makes inaccurate and misinformed judgements about the impact of the proposed open cut mine will have on our land and valuable livestock;
862.	Agriculture	Public Darley	SIG16	
863.	Visual	Public Darley	SIG16	
864.	Visual	Public Darley	SIG16	
865.	Human Health	Public Darley	SIG16	
866.	- Agriculture - Economics - Social	Public Darley	SIG16	
867.	Agriculture	Public Darley	SIG16	

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	Equine Health			
868.	Agriculture	Public Darley	SIG16	represents a totally inadequate and dismissive response to Darley's concerns and future operations.
869.	Agriculture	Public Darley	SIG16	Darley has not sought in this submission to repeat the significant impacts and inadequacies of the Drayton South Environmental Assessment identified by the Hunter Thoroughbred Breeders in their submission. Darley's submission concentrates on the impacts this open cut mining proposal will have on Darley's Hunter Valley operations, its viability and its future.
870.	Agriculture	Public Darley	SIG16	Proximity to Darley No where in the world, other than NSW, is a mining proposal located in such close proximity to a thoroughbred breeding operation of the scale and importance of Darley's Woodlands Stud. Currently the closest open cut coal mining operation to Woodlands is BHP's Mt Arthur coal mine. This mine is some 10 kms away from the stud farm and can be seen in the distance. It is far enough away so that its effects (visual and environmental) are tolerable. The Drayton South open cut coal mine proposal is 500 metres from Woodlands doorstep. It will be visible throughout its entire mine life (particularly the Redbank and Blakefield pits). A graphical representation of the proximity of this mine to our operations is presented in Appendix 1. The proximity of the mine is unacceptable and presents an intolerable situation for Darley.
871.	Visual	Public Darley	SIG16	Adverse Visual Impacts The susceptibility of our business to threats to our image and reputation are real. The Drayton South open cut coal mine brings these threats right to our doorstep. Our business and our entire industry hinges on the quality of our topography (soils, land, water and air quality), our image, breeding and racing performance and our reputation. Any threat to any one of those elements has the potential to undermine confidence in our product. It is no accident that the Hunter Valley's unique physical environment in which we operate is essential to our operations. The undulating topography, fertile soils and clean abundant water alongside the visually alluring topography and landscape is critical to our business model, to breeding and rearing and racing champion athletes and attracting investment and clients.

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				The visual integrity of our business is highly prized, and one in which we significantly invest in. It is fundamental to marketing our product and our business success. An open cut coal mine directly opposite Darley and within 500 metres of our operation is clearly incompatible with our business and our reputation as one of the world's leading thoroughbred breeding and racing companies.
872.	Visual	Public Darley	SIG16	The EA makes inaccurate assumptions about the visual impact of this open cut coal mine on Darley's operations. Darley will be highly visually impacted from a number of vantage points including the Darley Lookout, Trigg Hill, Randwick, Oglivies Hill – Golden Highway and as a result of the realignment of Edderton Road. We have serious doubts about the tree screening mitigation measures suggested as a basis for Drayton South's mitigation strategy. This strategy fails to recognise that there is high potential for failure. The assumption contained in the EA that Trigg Hill has low visual sensitivity and is not used as part of Darley's day to day operations is not only incorrect it misrepresents the integral nature of this area to our total operations. It is convenient for AngloAmerican to make this uninformed assertion given the view from Trigg Hill will be an unadulterated 27 year view directly into the Redbank and Blakefield pits. All the land at Woodlands (including Randwick Park which comprises Trig Hill and the paddocks adjacent to the Golden Highway that have a full view of the Redbank and Blakefield Pits) is developed (some more intensely than others) for thoroughbred use. Horses are rotated through parts of the farm to take advantage of various topographical conditions depending on need. To say that this area of Randwick Park is not part of our operation demonstrates the lack of understanding of our business and the impact on us. Currently one can see the Mt Arthur coal mine operation in the distance from this particular view point. As depicted in Appendix 2, the proximity of the Drayton South open cut coal mine will not only bring the operations of Redbank pit directly into view from our property (for the life of the mine) but will create a contiguous view of open cut coal mining stretching the entire 10 kilometres from our property across Drayton South and up to Mt Arthur. This will have a devastating impact on our investment and reputation.
873.	Visual	Public Darley	SIG16	It is concerning that the photomontages presented in the EA as part of the Visual Impact Assessment do not fully represent the visual impact of the mine plan. A comparison of the photomontages obtained by

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				Darley from Anglo American and presented in Appendix 2 reveals that: - the EA does not disclose photographs of the visual impact of the mine in Year 3 and Year 5, instead only presenting existing, Year 10 and Year 27 views where it could be considered that the visual impact is more acceptable; - the resolution of the photomontages presented in the EA are of lower quality. It is of concern that this may be a deliberate attempt to dilute and misrepresent the visual impact of the mine.
874.	Visual	Public Darley	SIG16	The Visual Impact Assessment text concedes that there will be a high visual effect of the Blakefield and Redbank Pits as viewed from Darley's Trigg Hill in years 3 and 5 however these photographs have been conveniently left out. The views from these vantage points are quite confronting. They present a very bleak picture of the significant visual impact this mine will have on our operations and reputation. More concerning is that it will take another 17 years (from year 10 to year 27) to fully rehabilitate the site. We are very disappointed that these stark and impactful images have been left out of the Drayton South Visual Impact Assessment and it begs the question what other important and impactful information has been omitted.
875.	- Agriculture - Economics - Mine Plan Justification	Public Darley	SIG16	Darley's Future in NSW in Jeopardy Darley Australia has assets worth hundreds of millions of dollars invested in NSW and its sustainable operations contribute significantly to the Hunter Valley economy. Indeed, Woodlands is Darley's singular most valuable asset in Australia and its viability as a thoroughbred farm is at risk because of the proximity of this mine plan. The EA totally ignores and makes no allowance for the risks and impact this open cut coal mine poses on the viability and future of our operations.
876.	- Agriculture - Economics - Social	Public Darley	SIG16	The Agricultural Impact Statement and the Socio-Economic Impact Analyses are totally deficient in that they: give no serious consideration to, or analysis of, the impact of this proposal on our business and reputation;

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877.	Agriculture	Public Darley	SIG16	ignore the incompatibility of thoroughbred breeding and mining which are competitive land uses;
878.	- Agriculture - Economics - Social	Public Darley	SIG16	fail to include the impact of this mining proposal on our farm productivity, land values, employment;
879.	- Agriculture - Economics	Public Darley	SIG16	fail to recognise the impact of this proposal to our and the thoroughbred breeding industry's economic contribution to our local, regional and state economies;
880.	- Agriculture - Economics - Social	Public Darley	SIG16	underestimate the significant and long term social and environmental costs of this project;
881.	- Agriculture - Economics - Social	Public Darley	SIG16	fail to consider the possibility of potential thoroughbred breeding closures as a result of this project and the impact that would have on job losses in the local, regional and state economies;
882.	Economics	Public Darley	SIG16	make overstated assumptions (including on the price of coal) that if rectified could materially alter the assumed economic benefits of this proposal.
883.	- Agriculture - Economics - Social	Public Darley	SIG16	Darley has invested in major capital expenditure projects at Woodlands including: - refurbishing the historic Woodlands Homestead; - major staff housing and amenities; - developing guest houses; - major fencing infrastructure; - development of pastures; and - major irrigation upgrades. Many millions of dollars have been spent on these and other capital projects on the Woodlands property. Much of this (some 85%) has been spent in the local economy supporting local businesses and local

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				employment. Projects like the Drayton South open cut coal mine however have created significant uncertainty and place our investments, growth potential and the security of our employees in jeopardy. Darley asserts that no reasonable person would choose to acquire, invest in, upgrade, or operate a thoroughbred breeding stud in such close proximity to a coal mine. It follows that mining and thoroughbred breeding in such close proximity are incompatible land uses. Should the Drayton South open cut coal mining proposal proceed, Darley will need to consider its future breeding and racing operations in NSW due to the nature and scale of the impacts of the Drayton South proposal on our business.
884.	- Agriculture - Social	Public Darley	SIG16	Darley Woodlands Community Darley's operations are highly labour intensive. We provide stable, long term jobs for our employees, many of whom live on-farm with their partners, family and children. Darley invests heavily in housing and amenities so that we can provide attractive and appropriate living quarters and living standards to our employees and their families. Over 70 people permanently reside at Woodlands. This included 10 families with children, 10 couples and 16 single residents.
885.	Blasting	Public Darley	SIG16	Given this, Woodlands should be recognised as a small community which, in the case of the Drayton South mine, is living directly opposite the proposed open cut coal mine. They will be directly impacted by the open cut coal mine's operations and negatively affected by: blastings (expected to be some 5 per week)
886.	Human Health	Public Darley	SIG16	health impacts;
887.	Air Quality	Public Darley	SIG16	dust impacts;
888.	Visual	Public Darley	SIG16	visual impacts;
889.	- Blasting - Noise	Public Darley	SIG16	noise, light and vibration;

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	Visual			
890.	Traffic and Transport	Public Darley	SIG16	traffic and road safety issues;
891.	- Groundwater - Surface Water	Public Darley	SIG16	adverse impacts to water quality and quantity.
892.	- Agriculture - Social	Public Darley	SIG16	These concerns are significantly amplified when they are in such direct and close proximity to a live-in and working community. They are major concerns to both our business and the welfare and living standards of our employees. It is our strong view that no mine should operate within a 10 kilometre radius of thoroughbred breeding studs and communities. The operation of the Drayton South open cut coal mine within 500 metres of our stud and the community of people that live on the Darley Woodlands property is unacceptable.
893.	Equine Health	Public Darley	SIG16	Impacts on Thoroughbreds Equine veterinary experts engaged by Darley are of the opinion that the assertions made by the EA on the impact of this open cut coal mine on thoroughbred horses are misleading and based on research that has little if any relevance to the breeding and rearing of horses on our property and throughout the Hunter region. The assertions that thoroughbreds can live with and adapt to high levels of dust are inaccurate, as are the statements that thoroughbreds can assimilate to increased noise levels. These statements clearly misunderstand the nature of our operations and the conditions in which we breed and rear our thoroughbred athletes.
894.	- Agriculture - Social - Stakeholder Consultation - Visual	Public Darley	SIG16	Inadequate response to Darley's concerns For many years Darley has consistently raised with Anglo American its concerns regarding the: - footprint of their proposed mining operation at Drayton South; - potential for future creep of those mining operations towards Darley Woodlands; - proximity of the open cut coal mine to Darley's operations;

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				- visual impact of the Drayton South open cut coal mine to Darley's reputation and operations; and - impact of this mine to the community of people that reside on the Darley property.
895.	- Agriculture - Mine Plan Justification - Stakeholder Consultation - Visual	Public Darley	SIG16	Anglo American made commitments and undertakings to Darley to: - fully consult Darley prior to submitting its Preliminary Environmental Assessment; - design its mine plan so that there will be no visual impact to Darley as a result of the Drayton South open cut coal mine; - explore other measures jointly with Darley to safeguard against future mine creep.
896.	Stakeholder Consultation	Public Darley	SIG16	Anglo American has failed to deliver on any of these commitments. Darley has engaged in a consultation process with Anglo American in good faith. It has had little alternative as the Government's processes force landholders into this situation. Darley is of the view however that this "consultation" is best described as a process that has proved to be one sided and few of Darley's significant concerns have been taking on board and addressed.
897.	- Agriculture - Air Quality - Blasting - Economics - Groundwater - Human Health - Noise - Regulatory and Planning Context - Social - Surface Water	Public Darley	SIG16	Conclusion Darley Australia strongly opposes Anglo American's Drayton South open cut coal mining proposal which is situated only 500 metres from Darley Woodlands operations in Denman. Woodlands is situated on strategic agricultural land in the equine critical industry cluster in the Upper Hunter Valley. Under the Government's new strategic land use policy projects such as the Drayton South open cut coal mine should be subjected to independent evaluation under the Government's new Gateway process. Despite the size, nature and impact on strategic agricultural lands the Drayton South open cut proposal is not being referred to a Gateway Panel for review. Should the Drayton South open cut coal mine proposal be allowed to proceed, the visual, dust, noise, vibration, health, water, environmental and reputational impacts this proposal will have on our operations, and on the operations and reputation of other studs in the area and our entire industry, will be devastating. It will jeopardise hundreds of jobs associated with our industry and irreversibly damage our landscape and the economic diversity of our region.

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	Visual			Importantly it will signal that the NSW Government does not support our industry and is prepared to sacrifice our industry for the sake of one open cut coal mine that is clearly incompatible land use and disadvantageous to our operation. We hope that the NSW Government will seriously take heed of the concerns we and other landholders are raising in our objections to this open cut coal mine. It is the first test of the Government's commitments that it will protect our industry, our employees and our livelihoods. Darley reiterates that no reasonable person would choose to acquire, invest in, upgrade or operate a thoroughbred breeding business in such close proximity to a coal mine. It follows that mining and thoroughbred breeding in such close proximity are incompatible land uses. Should the Drayton South open cut coal mine proceed Darley will be forced to reconsider its commitment to its operations in NSW due to the nature and scale of the impacts of this proposal on our business.
898.	- Agriculture - Visual	Public Darley	SIG16	The following are not included in this table: - Appendix 1: Drayton South Open Cut Proximity to Darley Woodlands - Appendix 2: Photomontage – Darley Trig Hill
Public Submissions				
899.	- Agriculture - Social	Public Confidential 1	P1	I believe that the negative social and environmental impacts of the project are underestimated in the assessment. The vineyards and wine-makers of the hunter valley have gained world fame and given the valley a global identity. Trading this identity against some very specialized, short-term employment through exploitation of natural resources is not a sustainable practice. Wine-making has many hundred years of history in the world (and a bit less in Australia) and will provide employment for future generations while protecting natural resources instead of destroying them.
900.	- Agriculture - Tourism - Visual	Public Confidential 2	P2	As a tour operator in the Upper Hunter Region and the increasing mining activity in the region is diminishing my business and the areas tourism potential. Our visitors to the region are looking for an unspoilt vista which includes Thoroughbred Studs, vineyards and the natural landscape of the area and not the artificial and ugly

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				spoil heaps that will blight the views of the visitors to our beautiful region.
901.	Air Quality	Public Confidential 3	P3	I am writing as a concerned resident to object to the Drayton South open coal mine project. We have lived in Jerrys Plains for all of my life and find the pollutants and dust getting worse.
902.	- Air Quality - Human Health - Noise - Traffic and Transport	Public Confidential 3	P3	My reasons for objecting to this proposal are as follows: I believe the health, dust, noise and traffic is a big concern to us.
903.	Air Quality	Public Confidential 3	P3	The exceedances of PM 10 are referred to in the paper what about the 2.5s?
904.	Human Health	Public Confidential 3	P3	We have five children 3 of who have asthma and one with severe asthma. We have had one child who has had over 5 months off school due to her asthma. This is a big impact on her life as next year she is entering year 10. Our children don't need these impacts on their lives. Although we have been advised to leave this is not possible due to our situation.
905.	- Air Quality - Human Health	Public Confidential 3	P3	We rely on rain water for drinking and household purposes and with this mine closer we will receive more dust from the mining activity.
906.	Air Quality	Public Confidential 3	P3	The amount of coal dust that we already receive will become worse as this mine is coming closer to us.
907.	Air Quality	Public Confidential 3	P3	We are going to have that much dust in our homes due to the long regeneration and mining process
908.	Noise	Public Confidential 3	P3	With the current noise that we have from other mines we believe that this mine being closer will produce more noise for us thus causing problems.
909.	Traffic and Transport	Public Confidential 3	P3	The study for the traffic and transport (RTA 2004) for the Golden Highway is irrelevant to the current situation as the traffic that we are experiencing now is a lot worse then what it was back then. The Golden Highway and the turn off between the Mitchell line and New England highway really need addressing due to the increase in traffic.

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				I respectfully ask that you register my objection to this proposal and seriously consider my objections when assessing the appropriateness of the Drayton South open cut coal Proposal
910.	- Air Quality - Ecology - Rehabilitation	Public Confidential 3	P3	The regeneration will take a long time to grow and the dust from this is going where?
911.	- Agriculture - Final Landform - Social	Public Confidential 4	P4	I object to the development of this mine. I believe that it will have unacceptable impacts on the landscape of the Upper Hunter, and the people and industries that already dwell and operate there.
912.	- Cumulative - Groundwater - Surface Water	Public Confidential 4	P4	I do not believe that the Environmental Assessment adequately assesses the impact of the mine on local water courses, nor does it address the cumulative effects on groundwater from existing operations and surrounding mines.
913.	General	Public Confidential 4	P4	I support the efforts of local landholders, including horse breeders, to stop this mine from going ahead.
914.	General	Public Confidential 5	P5	I am writing as concerned Denman residents to object to the Drayton South open coal mine project. We are both employed locally in the Thoroughbred industry which we have been for the last 20 years, prior to owning our Family Business in Denman. We are 4th Generation --- and are proud of our ancestry with my Great Grandfather Landing and Evacuation of the Dardinells at Gallipoli and also at the Charge of the Battle of Lone Pine in France. My reasons for objecting to this proposal are as follows:
915.	- Agriculture - Economics - Social	Public Confidential 5	P5	The impact this mining proposal will have on neighbouring industries and community i.e. the Thoroughbred Industry is our employer and the project is right across the road from our Stud. This will have a flow on effect to the other producers in our area.
916.	- Agriculture - Rehabilitation	Public Confidential 5	P5	The most relevant issue to us is the lack of evidence that the land can be returned to viable agricultural use post the mining project.
917.	Groundwater	Public Confidential 5	P5	Pollution of water sources and water quality which our valley and our town at Denman relies on heavily.

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	Surface Water			
918.	- Visual - Tourism	Public Confidential 5	P5	The area is already visibly disgusting with the mine dust, and the local areas that were once attractive to tourism are already showing signs of a slowdown.
919.	Traffic and Transport	Public Confidential 5	P5	We travel the Golden Highway daily and find it confronting that we have to put up with the heavy wide loads and extra mine traffic which exists at present and with the Open Cut Proposal this will only increase this traffic, in areas that were not designed or planned for and in some cases are downright dangerous.
920.	- Air Quality - Human Health	Public Confidential 6	P6	Overall air quality, dust on residential rain water catchment. Loose and ignore good mining practices.
921.	Traffic and Transport	Public Confidential 6	P6	Increase traffic concerns/oversize vehicle road usage, congestion on roads affecting emergency services, schooling and recreational.
922.	- Air Quality - Cumulative - Human Health - Noise	Public Confidential 6	P6	Cumulative impact to health of continuing increase in mining dust and noise
923.	- Economics - Social	Public Confidential 6	P6	Socio-economic: land values, ambient and choice of life style
924.	Visual	Public Confidential 6	P6	Visual impact on the character, cultural identity of the region.
925.	- Groundwater - Surface Water	Public Confidential 6	P6	Water issues: pollution of water sources/water quality, known and documented breaches of codes of conduct regulations regarding water usage and disposal
926.	General	Public Au	P7	I am writing as a concerned General Practitioner and resident of the Hunter to object to the Drayton South open cut coal mine project. I have been practicing medicine in Singleton, NSW for 16 years. I also reside there with my wife and three children. I have many concerns about the proposal of the Drayton South open cut coal mine and I am objecting to its approval.

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927.	Human Health	Public Au	P7	My reasons for objecting to this proposal are due to my concerns for the health effects that mining is having on the residents of the region.
928.	- Air Quality - Human Health	Public Au	P7	During my time working as a medical practitioner in the Hunter I have noted an increased frequency in dust related diseases, particularly asthma, in the region. Furthermore, from my observations this disease affects the children of the region most significantly. Additionally, I have grave concerns regarding other health effects on Hunter residents such as: increased mortality rates, low birth weight incidence, genetic malformations, heart attack, stroke and cancer rates. Given the above concerns, I feel that it is essential to conduct a Health Study in already affected areas in order to investigate damage that is already being done to the residents of the Hunter Region. In addition, it is essential to require a Health Study to be conducted as part of any application to mine in order to establish baseline data. The Drayton South open cut coal mine has not performed such a study and as such I am of the view that this project should not be approved.
929.	General	Public Barry	P8	I am a landholder and conduct a business from Retreat. Retreat is approximately a 180 hectare property backing into the Wollom National Park. It is a mixture of fertile flood plain, mixed grazing and virgin bush. The original homestead circa 1912, still stands proudly. I have spent over \$2 million in developing the property to cater for tourism and as an agistment farm for horses. I will say now that the outlay would have been closer to \$3million if not for interference and uncertainty of mining projects that immediately impacts on my property. I vehemently object to the Drayton South open coal mine project. My reasons for objecting to this proposal are as follows:-
930.	- Agriculture - Economics - Social - Visual	Public Barry	P8	Jerry's Plains is at the epicentre of the thoroughbred racing industry in Australia. We have two of the biggest stud farms in the southern hemisphere in close proximity, namely Coolmore and Darley. First and foremost, both studs are true local employers which is not the case in the coal mines. The studs, by their very nature are environmental custodians of the land. The studs create enormous business for the area, for NSW and Australia. My firm belief is that NSW should be showcasing places such as Coolmore and Darley to the world. Instead, through corporate greed (primarily not Australian companies) and policies of the previous NSW Government,

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				Coolmore and Darley have been surrounded by mining, open cut in the main. The Drayton Open Cut mine will meet the boundaries of these two iconic studs. A major part of the business of both studs is their visual presentation to visitors, many of them from overseas. What the Upper Hunter has been inflicted with in terms of poorly planned mining is currently beyond the realms of logic. However, to allow an open cut mine next to such an important industry such as thoroughbred racing is ludicrous. I have seen the reaction of visitors to the area when you show them the beautiful landscape, the many historic features of the area, then the existing mines and the proposed mining leases. The response is standard, absolute shock and dismay.
931.	- Agriculture - Economics - Social	Public Barry	P8	Should this mine be approved, I would suggest that NSW may lose both Coolmore and Darley. The repercussions would be significant. I cannot understand any government, any bureaucracy wanting this outcome. There is a need for balance in the Upper Hunter. To create this balance, there is a need, no an obligation, to recognise the thoroughbred industry and their commitment and input into the community. This mine should be rejected simply on this basis. As an addendum, information provided ad hoc by Anglo American staff over a lengthy period of time (years), was that they had no intention of mining anywhere that would affect the horse studs, visually or operationally. This back flip is a typical of the manner in which mining companies have consistently treated all other stakeholders in the Upper Hunter, with absolute disrespect and disdain.
932.	Air Quality	Public Barry	P8	I spend significant time in Sydney. I often drive along the Putty Road from the outskirts of Sydney. The entire drive, until the road opens up at Bulga is pristine with beautiful bush land and extremely clear air. Regularly, far too regularly, once I reach Bulga there is nothing other than a dust storm on the horizon. This remains a constant as I drive towards Jerry's Plains. Why?
933.	Air Quality	Public Barry	P8	The population of the Upper Hunter live in the centre of more than 30 open-cut coalmines and six coal-fired power stations. If we were in a third world country this may be acceptable to the governing body. However, in a supposed democracy, why should we suffer any less air quality than those in other areas of Australia. The greatest dishonesty portrayed by mining companies in their advertising is that they appear to mine in the 'outback'. We are not in the outback. We are in an industrious area, where people have lived for generations, making a living in other pursuits other than mining.

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934.	Air Quality	Public Barry	P8	My home is approximately 5 kilometres from the open cut mines of Wambo and Coal & Allied. Both of these mines are located on the Singleton side of Jerry's Plains, with both approaching the township at a rapid pace. This is also a major area of concern. However, I can run my hand along the side of my house, on the side facing the mines and wipe black coal dust from the weatherboards and window sills. Yet the mining industry would have you believe that there is no such problem. I welcome anyone from your department to visit my property unannounced to see for yourself. Even now, on a quiet morning as I sit and try and enjoy what I have created, in the distance is the drone of the mines. The proposed Drayton mine will be closer to me than the two offending mines. The sheer size of the proposed mine will ensure that I, along with my family and the many tourists I may attract, are also affected by additional coal dust and noise.
935.	- Air Quality - Cumulative - Noise	Public Barry	P8	I was fortunate to attend the Sydney University earlier this year for the launch of the research report 'Health And Social Harms Of Coal Mining Report' which focuses on the Upper Hunter Valley. To say the least, the report is extremely disturbing. What is even more disturbing is that this appears to be the FIRST report of its kind into the health effects that coal mining and coal fired power stations have on nearby residents. There are numerous overseas studies that are mentioned which further reinforces the extreme health issues created by coal mining. In brief, the report shows increased levels of poor health (respiratory/cancer) of residents living in close proximity to mining compared with non mining areas. I have two near neighbours with cancers in the brain, one deceased and one almost. The report also discusses the social distress suffered by residents and the environmental injustice that exists in the Upper Hunter. The report states what every affected resident of the Upper Hunter has been saying for years. Hopefully, the Government will listen to a number of Professors from Sydney University because the Government doesn't seem to be listening to the community. This report has identified has been a severe health risk identified. Under NSW WHS legislation, if this report was delivered to an employer and it related to the workplace, that employer must act to remove the risk for his employees. If the health warning was ignored, that employer would be open to criminal prosecution and/or substantial fines.
936.	Human Health	Public Barry	P8	
937.	Social	Public Barry	P8	
938.	Human Health	Public Barry	P8	

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				In other words, the Government has legislated a 'high' level of Duty Of Care for employers under WHS legislation. Is the NSW Government above this legislation when it comes to dealing with health issues of its constituents in the Upper Hunter?
939.	General	Public Barry	P8	The NSW Government must act now before it is too late. You have first-hand knowledge that Jerry's Plains is under siege from encroaching Wambo and Coal & Allied Mines. You know that NuCoal is trying to set up a mine within what should be the built up area within the township of Jerry's Plains. Now Drayton South is planning to complete the 'black' circle around the township. It is totally wrong!
940.	Human Health	Public Barry	P8	By not acting, it will be clear that the residents of Jerry's Plains and its immediate surroundings are expendable. If it was war, we would be seen as 'collateral damage'. I can't help thinking that this is reality, given the comments of a senior government official at Singleton, in the meetings that Ministers Souris, Hartcher and Hazzard attended. The official, whose name I cannot recall (wish I could), said words to the effect, that he has an obligation for the health of people in the larger regional centres (full stop). Show us that we all count.
941.	Human Health	Public Barry	P8	As an aside, the mining industry is saying the report lacks objectivity because it was funded (or commissioned) by 'Beyond Zero Emissions'. This comes from an industry that buys its way into parliament through lobbyists, that buys community support by donating money to universities, hospitals and the like and who have a full time machine to produce propaganda telling everyone how good they are for the environment and the economy. Who is the villain here? Based entirely of the identified risk to the health of residents in Jerry's Plains and surrounds, the Drayton South project should be rejected. A link to the Coal Health report appears below. http://media.beyondzeroemissions.org/coal_health_Report_FINAL.pdf
942.	- Economics - Social	Public Barry	P8	As indicated, I have invested some \$2 million at Retreat. I suppose not a great deal of money compared to coal mines, however, I am proud of what I have achieved. The reality is that the outlay should have been \$3 million. I had plans drawn up to turn the original homestead into a luxury 6 bedroom destination. All of this money would have been spent with local builders. Because of the rush of the mining industry in and around my beautiful property, I did not complete the entire project. So what was lost to the true local business community, not the imported mining business community, was \$1 million.

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				This scenario is not entirely common to me. We simply stop spending through fear of what is going to happen to the remaining pristine land in and around Jerry's Plains. Many simply up and leave, reducing the resistance to the mining industry. This is social engineering at its best. Yet, government continues to allow it to happen. If mining was so good for the economy, why is it that Singleton does not have a world class hospital facility? The reality is that most of the money goes out of the area, predominantly overseas. Do you really think that Anglo American knows anything about the Jerry's Plains community or in fact cares? If you look at the size of the business that controls this mine, mining interests are less than 5% of their business. This is a commercial game of monopoly to them, using other people's properties, houses and life pursuits as their playing tools.
943.	- Agriculture - Economics - Social	Public Barry	P8	Mining has all but destroyed the beef industry in and around Jerry's Plains. Yarding at Singleton and Denman has dropped dramatically over the years. Why? Very simply the mines have/are taking over grazing land. Peabody Mines purchased Montrose, a large river fronted property with a water allocation of 600 mega litres just outside Jerry's Plains. The property has historically carried 1000 steers. Peabody leased the property to a beef producer but gave them only 70 mega litres of water, keeping the rest to wash coal. What that means is that the property won't carry 1000 steers anymore, it is lucky to carry 100. Coal & Allied purchased a large property that was in the way of their open cut operation, again a property carrying about 1000 steers. Coal & Allied did put cattle on this property, but instead of selling through Singleton or Denman, they bought and sold in Dubbo. What benefit to the local community?
944.	Agriculture	Public Barry	P8	Anglo American has done the same thing, purchasing vast tracts of land on the Muswellbrook side of Jerry's Plains. This was land historically used for beef cattle production. I say WAS, because that is all gone or earmarked to go. We are talking about the destruction of in some cases, prime agricultural land and other lands that sustains the growth of quality cattle. I have heard nothing truer than you can't eat coal!
945.	- Air Quality - Agriculture - Economics - Social	Public Barry	P8	As indicated previously in this submission, should further mining cause Coolmore and Darley to leave NSW, which is a distinct possibility, it will have a devastating effect on the local community in terms of employment and support services. There is a strong argument that mining creates local employment. I can say without fear of contradiction that most of the miners who work in the mines in the Upper Hunter valley, travel for many hours to work. They are not residents of the Upper Hunter. This will be the same scenario for the Drayton

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				South project. Benefit to the local community – dust, destruction, dislocation.
946.	- Tourism - Visual	Public Benjamin	P9	I conduct tours of our beautiful region (Upper Hunter Tours) including the National Parks, Thoroughbred Studs, Vineyards, Olive Groves and historic homesteads. The visual impact of the Open Cut Mines in the area in particular those that are going to be close to the studs and the township of Denman I am totally against. The visitors we have both from Australia and Overseas can't believe we are doing to our pristine area. I tell them it's all about money for the State Government and the Mining Companies and we all come second after that. Why can't you leave well alone and don't destroy any more land in our area. I respectfully ask that you register my objection to this proposal and seriously consider my objections when assessing the appropriateness of the Drayton South open cut coal Proposal.
947.	- Air Quality - Cumulative - Economics - Groundwater - Human Health - Noise - Surface Water - Traffic and Transport	Public Bowman	P10	Cumulative studies on the impacts of mining health, dust pollution, noise, traffic congestion, water and economic impacts need to be conducted before new mines or mine extensions are approved.
948.	Agriculture	Public Bowman	P10	So much is being written on Australia's next booming industry – Agriculture. Australia has the capacity to feed half of South East Asia if our land and water is left intact. The Hunter Valley is well connected to shipping and airports by road and rail. A location for Agriculture. Food production is sustainable, it can go on forever. In contrast mining is short term and leaves total destruction. Mining sterilises land for agricultural use.
949.	Air Quality	Public	P10	This mine proposal will have an unjustified impact on neighbouring industries and the community. The

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
	- Groundwater - Noise - Surface Water - Social	Bowman		thorough industry is a sustainable industry that employs more permanent staff that the coal mining industry, and can continue that employment for years to come. This mine proposal threatens this industry as it is a source of dust pollution, noise pollution and water pollution. If threatened by this mine, the industry will move to an area which fits into its business plan, an area where it is not threatened by mines.
950.	Economics	Public Bowman	P10	An economic impact assessment <u>must</u> be undertaken to assess the effect of this mine proposal on all other non-mining industries and businesses in the region. Prospective rural businesses will not locate to areas threatened by coal mine expansion.
951.	- Agriculture - Groundwater - Soil and Land Capability - Surface Water	Public Bowman	P10	There is presently no certainty that mined land can be returned to viable agricultural use. The NSW Minerals Council Stakeholders workshops are only now investigating how to remedy the soil and water destruction that has occurred with open cut mining during the last thirty years. Open cut mining has only been used for the last thirty years. It may take fifty to one hundred years to see the long term effects of this type of mining. Australia must not take a "chance" that "all will be well".
952.	- Groundwater - Surface Water	Public Bowman	P10	Without water, in quantity and quality, there is no life. There has been no complete study of water in the entire Hunter Valley, especially in relation to surface and groundwater and their connectivity. The connectivity between groundwater and surface water must be assessed before this project goes ahead. The water sharing plan is being breached constantly.
953.	Traffic and Transport	Public Bowman	P10	Further mine development will place the Golden Highway under immense traffic pressure. At present the Golden Highway is only capable of handling the existing traffic flow. Increased mine traffic will impact on emergency services, local schools and the community.
954.	Air Quality	Public Bowman	P10	Fourteen air monitors in the upper hunter air quality monitoring network are collecting data on dust particles in the atmosphere. Recently air quality alerts, when levels of dust become hazardous, have become frequent. Levels of dust are too high now; additional mines will contribute to higher levels of dust. The mitigation measures that the mines take to reduce dust are not effective, or we would not have such a high frequency of air quality alerts.
955.	Air Quality	Public	P10	The cumulative effect of many mines producing dust needs to be taken into consideration when considering

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	- Cumulative - Human Health	Bowman		this application. Further study is needed in this area before new mines are approved. CSIRO and ANSTO are currently testing the chemical composition of dust collected. The research on ultrafine particles and their composition has not been completed. The quantity of mine dust that falls out of the atmosphere is increasing. Rural communities that rely on rain water for drinking are being exposed to this fallout that collects on their roofs and ends up in their rain water tanks.
956.	- Air Quality - Equine Health - Human Health	Public Bowman	P10	A health assessment study on the effect of coal mining pollution on human and animal health has ever been part of the mine application process prior to any of the consideration of the mine extension process. This must now be part of the application process prior to consideration of a mine extension or new mine. Thoroughbred race horses must be "dust free". Lungs filters dust out of the atmosphere and this dust accumulate in the horses' lungs as it does in human lungs.
957.	Human Health	Public Bowman	P10	Muswellbrook and Singleton Local Government Areas are over represented in emergency department presentations for asthma and respiratory ailments. "Singleton and Muswellbrook LGAs have higher rates of cardiovascular disease hospital separations than all of the Hunter New England Health Area Health Service (HNEAHS) or NSW." (P.19 NSW Department of Health (2010) Respiratory and cardiovascular disease and cancer among residents in the Hunter New England Area Health Service Report).
958.	Air Quality	Public Bowman	P10	Best practice dust minimisation in the mining industry has no meaning. There are no set criteria and weather conditions alter practices within seconds. Coal mines do not adjust their operations when conditions are not favourable for dust production.
959.	- Air Quality - Noise	Public De Boer	P11	The environmental impact assessment indicates the impacts from the proposed project are consistent with those already approved by the current Drayton Mine Project Approval with the addition of an open cut and highwall mining operation, extracting up to 7 Mtpa ROM coal over 27 years with the utilization of the existing Drayton Mine workforce, equipment and the utilization of existing Drayton Mine infrastructure together with the construction of a transport corridor between Drayton South and Drayton Mine. The increase of trucks carting overburden and the likely changes to noise impacts as a result also creates further uncertainty.
960.	Blasting	Public De	P11	We wish to submit our objections on the basis that the existing mine already creates unsatisfactory

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	- Cumulative - Noise - Traffic and Transport	Boer		cumulative noise, blasting impacts and rail traffic impacts interfering with living standards to the Antiene landowners, particularly our residence in Pamger Drive, Muswellbrook. This is substantiated by the number of complaints reported at every Drayton Community Consultative Committee Meeting. This information can be obtained from Drayton Mine's records.
961.	- Economics - Human Health	Public De Boer	P11	As indicated Drayton Mine will continue to operate under existing Project Approval 06-0202 and there will be a period when Drayton Mine and Drayton South operates concurrently. This will be most unsatisfactory to us as since the operation of Drayton Mine commenced in 1983, our property has been seriously affected by the mining operations of Drayton Mine and any further increased operations will only exasperate the current situation. It is with this in mind we strongly object to any further extension of the Drayton Mine which will only further depreciate our property value, interfere with our living standards and continue to provide further increased unwarranted living standards.
962.	- Agriculture - Cumulative - Final Landform - Human Health - Rehabilitation	Public Dugonics	P12	My objection to the Drayton South Open Cut Mine Proposal is based on the impacts that this mining project will have on the local industries, the cumulative health effects of mining in the Muswellbrook/Singleton region, the ever expanding moonscape in the region, and the post-mining rehabilitation of the project.
963.	- Final Landform - Tourism - Visual	Public Dugonics	P12	This mine like the other mines in the area, has contributed to making the luscious and vibrant Hunter Valley into a desolate moonscape, with only the grey and dark holes in the ground for view. This visual eyesore would have a significant impact on the residence living the area and the tourism industry that the local residence depends on for their livelihood.
964.	- Agriculture - Economics - Groundwater - Social	Public Dugonics	P12	Further impacts by this mine to the local community comes from the expansion of the destructive forces of the mining industry, over-riding the local industries rights to access an un-disrupted clean water supply for the agricultural and thoroughbred industry, that are a key employer in the region and this particular project will take place literally across the road from the two biggest studs. This project's Environmental Assessment does not take into account the impacts of the neighbouring and local farms. The report has admitted that through

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	Surface Water			the mining project will encroach and reduce the neighbouring agricultural production capacity from the estimated \$701,208 per annum to \$257,110 per annum according to the Drayton South Coal Project's Agricultural Impact Assessment. This shows a complete disregarded and contempt by Anglo-American for a pre-existing local industry that is vital to the local economy of Muswellbrook and Singleton.
965.	- Air Quality - Cumulative	Public Dugonics	P12	This mining project will add to the cumulative effect on the air quality and dust issues in the Muswellbrook/Singleton region. This has not been taken into account in the air.
966.	- Agriculture - Surface Water	Public Dugonics	P12	The watering down of coal dust from this project deviates important water supplies from more vital service s and industries (like the local agricultural/equine industries) to be put into a process which is in-efficient, attempts to mitigate a problem that should not occur and the run-off from this watering down process leeches pollutants into the local environment and water supply.
967.	- Agriculture - Cumulative - Final Landform - Rehabilitation	Public Dugonics	P12	There is a lack of evidence that the land can be returned to a viable agricultural use post the mining project and that many of the projects in New South Wales have yet to be rehabilitated to anywhere near their original state and considering the scale of many of the mining projects in the Muswellbrook/Singleton area, it can hardly proved that any mine here would ever achieve full recovery. I refer to the New South Wales Auditor-General's Report to Parliament Vol. Six 2011; focus on Environment, Water and Regional Infrastructure, where it has stated that "303 contaminated sites under the Contaminated Land Management Act 1997 (the CLM Act) and Environmentally Hazardous Chemicals Act 1985 and that 11 percent are on State land" and over 500 derelict mines that were covered by other former state departments that have not been accounted for under the CLM Act. The report continues to state that "the Derelict Mine Program has many thousands of hectares of degraded and contaminated lands where the mining companies abandoned a mine without cleaning up or stabilising the mine site". It is my believe that this project will simply become another statistic to the New South Wales Auditor-General's office in 27 years time, creating a further burden on the New South Wales Government derelict mining issues, not to mention the effect this will have on the already overburdened residents of the Muswellbrook and Singleton region that will have to deal with the cumulative effects of having another abandoned mining operation.
968.	General	Public Eaton	P13	I am writing as a concerned resident to object to the Drayton South open coal mine project. I have lived in the Denman area for 10 years and in that time have seen the ongoing degradation of the region.

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969.	Economics	Public Eaton	P13	Land values and how mining would adversely impact upon them.
970.	Agriculture	Public Eaton	P13	Viticulture – value of the reputation of the Hunter Valley
971.	- Agriculture - Economics - Social	Public Eaton	P13	The impact this mining proposal will have on neighbouring industries and community: thoroughbred industry is a key employer in the region and the project is right across the road from the two biggest studs. This will have flow on effects to the other producers in the region.
972.	- Agriculture - Rehabilitation	Public Eaton	P13	Lack of evidence that the land can be returned to a viable agricultural use post the mining project;
973.	Soil and Land Capability	Public Eaton	P13	Soil characteristics, including types and depth;
974.	Final Landform	Public Eaton	P13	Topography / slope;
975.	Agriculture	Public Eaton	P13	Agricultural support infrastructure;
976.	- Ecology - Rehabilitation	Public Eaton	P13	Weed management;
977.	- Ecology - Rehabilitation	Public Eaton	P13	Bio security (a set of preventive measures designed to reduce the risk of transmission of infectious diseases, quarantined pests, invasive alien species, living modified organisms)
978.	- Groundwater - Surface Water	Public Eaton	P13	pollution of water sources / water quality
979.	- Agriculture - Groundwater - Surface Water	Public Eaton	P13	water moves away from agriculture and any water quality issues as they affect agriculture,
980.	- Groundwater - Surface Water	Public Eaton	P13	known and documented breaches of the codes of conduct / regulations regarding water usage and disposal.

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
981.	Visual	Public Eaton	P13	How will the project impact on the visual character and amenity of the region?
982.	Visual	Public Eaton	P13	- Who is the mine visible to? - traffic from Golden Highway/ tourism / quality of life - taking into consideration residences and vantage points on various properties
983.	- Air Quality - Visual	Public Eaton	P13	Visibility of dust and lighting and its adverse impact on your business.
984.	Aboriginal Heritage	Public Eaton	P13	Aboriginal
985.	Non-Aboriginal Heritage	Public Eaton	P13	Non-Aboriginal
986.	- Aboriginal Heritage - Non-Aboriginal Heritage - Social	Public Eaton	P13	Overall value to the community and cultural identity of the region
987.	Tourism	Public Eaton	P13	Tourism value
988.	- Non-Aboriginal Heritage - Air Quality - Blasting - Non-Aboriginal Heritage	Public Eaton	P13	Are there any historical structures / sites that you are concerned will be affected by blasting and dust etc?
989.	Social	Public Eaton	P13	Skill shortages / labour shortage in the region;

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
990.	Social	Public Eaton	P13	Lack of affordable housing;
991.	Social	Public Eaton	P13	- Pressure on the supply and demand for community services and facilities such as: - Emergency services - Hospitals - Schooling - Recreational - Demographic of the area (predominately Anglo-Saxon, male)
992.	- Cumulative - Traffic and Transport	Public Eaton	P13	Increased traffic concerns / oversize vehicle road usage (for individual project as well as cumulative effects) – making it more difficult and less safe to traverse with farm machinery.
993.	Traffic and Transport	Public Eaton	P13	Increased congestion on roads leading to a greater likelihood of accidents/ decreasing safety.
994.	- Economics - Social	Public Eaton	P13	Threat to the diversity of the regional economy as mining drives out other sustainable industries and the long term employment they provide.
995.	Economics	Public Eaton	P13	Threat to the sustainability of the regional economy and the threat to the fabric of the region if sustainable industries are squeezed out.
996.	- Air Quality - Human Health	Public Eaton	P13	- Dust effects on: - Overall air quality - Residences / rain water catchment - If dust produced by the mine is to be subdued by watering we are concerned by the run off of this polluted water and also concerned as to the usage of precious water for this unnecessary purpose when it would be better allocated to farms in order to produce.
997.	- Air Quality - Human Health	Public Eaton	P13	Concerns regarding the impact of continuing increases in mining dust on community health.

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998.	Cumulative	Public Eaton	P13	No cumulative impacts have been considered.
999.	Human Health	Public Eaton	P13	Precautionary principle regarding health effects short and long term should be applied; there is insufficient data to make a sensible determination regarding the health effects upon the residents of the regions that are already exposed to high density coal mining, particularly open cut.
1000.	- Air Quality - Cumulative - Human Health - Noise - Traffic and Transport	Public Eaton	P13	The Drayton South proposal lacks consideration of all the cumulative impact of mines together in the region on dust, health, noise, traffic, safety and the character of the region)
1001.	Cumulative	Public Eaton	P13	Industrialisation of the region and irreversibility of the damage caused
1002.	Surface Water	Public Eaton	P13	The EA fails to discuss the relative values of the local watercourses from commercial, aesthetic and ecological perspectives.
1003.	Cumulative	Public Eaton	P13	The EA fails to address the cumulative effects from existing operations and are likely to be compounded by the impacts from proposed adjacent mining projects.
1004.	- Agriculture - Economics	Public Eaton	P13	The economic analysis does not address the impacts on the neighbouring farms. The assessment is solely based on the site and the off-set site.
1005.	Ecology	Public Eaton	P13	The competition resulting in the nearby farm and woodlands from the addition of new species from the project site would result in high levels of competition for food and shelter.
1006.	- Agriculture - Economics - Social	Public Eaton	P13	The assumed value of coal in the analysis appears high given a 27 year project time span. The impacts on farm productivity and land values for neighbouring properties have not been included. The assumptions around the impact on Labour appear inconsistent with extremely low unemployment rates of the neighbouring towns.
1007.	Agriculture	Public Eaton	P13	No serious consideration is given to assessing and addressing the cumulative effects of this project on

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
	- Economics - Social			agricultural industries or to the impact of a larger population or demand on housing affordability, supply and demand for community services and facilities.
1008.	Soil and Land Capability	Public Eaton	P13	The criteria for assessing the land suitability has not been specified in the report.
1009.	Visual	Public Eaton	P13	Lack of information on the visual changes on the site in the initial years. The mapping makes it difficult to full assess where the bund will be positioned. What will be the impact of the bund on the local microclimate, wind directions etc. The impact of dust and lighting to the local community is only briefly addressed at the end of the impact assessment. Measures to mitigate the visual impact of the construction of the bund include progressive tree planting however no detail is given as to likely success of this, strategy if survival rates are low, maturity profile of trees being planted etc.
1010.	- Agriculture - Blasting - Noise	Public Eaton	P13	The impact of blasting on the community, neighbouring livestock and continued and incremental increase in rail noise is not fully accounted for.
1011.	- Cumulative - Traffic and Transport	Public Eaton	P13	In addition to concerns about the cumulative impact of an additional mine on the infrastructure in the area, there are also concerns that key proposed intersection upgrades should be completed before the construction period for the mine commences to ensure it operates safely.
1012.	Air Quality	Public Eaton	P13	Whilst the report states that ground-level concentrations will be minimised through monitoring and mitigation measures and best practice will be implemented, the study has not demonstrated that these will be sufficient to achieve compliance with the criterion.
1013.	Greenhouse Gas	Public Eckersley	P14	Produce additional 0.31 million tonnes of greenhouse gas emissions per year which is totally unsupportable in the context of climate change.
1014.	- Air Quality - Noise	Public Eckersley	P14	Cause air and noise pollution
1015.	Ecology	Public Eckersley	P14	Will destroy 1,928 ha including 107 ha critically endangered Box-Gum Woodland derived native grasses and

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
				398 ha native forest, woodland and shrub land which is protected under law.
1016.	Ecology	Public Eckersley	P14	The proposed biodiversity offset property is in a different bioregion approx 70kms to north of mine proposal, and regardless of offsets I cannot accept the net loss of biodiversity. The balance book on biodiversity will still be in debit.
1017.	- Groundwater - Surface Water	Public Eckersley	P14	Impact adversely on the Hunter River, Saddlers Creek and Saltwater Creek.
1018.	- Ecology - Groundwater	Public Eckersley	P14	Have an unacceptable impact on groundwater dependent ecosystems, particularly Red Gum and River Oak
1019.	- Greenhouse Gas - Climate Change - Groundwater	Public Eckersley	P14	Will leave post mining final void that will take approx 1,000 yrs to reach equilibrium which is an unacceptable burden on future generations who have lost productive farming and must bear the burden of climate change ensuing from the carbon released by the clearing of bushland forests.
1020.	- Agriculture - Economics	Public Eckersley	P14	Is adjacent to seven thoroughbred horse studs including Coolmore and Woodlands, eleven dairies, four vineyards (3 with wineries), an olive grove with processing plant which will be adversely impacted by the development. The economic assessment is not adequate.
1021.	Cumulative	Public Evans	P15	I am writing to you as a concerned land & business owner from Doyles Creek in the Hunter Valley. I am extremely concerned that current new mine proposals, (& I consider Drayton South as a new mine & not an extension) are unsustainable when the cumulative effects with the existing mines are considered.
1022.	- Agriculture - Economics	Public Evans	P15	The Drayton South proposal appears to look like the Super Pit of the Hunter Valley & will boarder some of the richest agricultural land in the Valley. We have 2 world class Thoroughbred Horse Studs which I would say will be forced to reconsider their viability if they have a mine of that size on their back door. We also have many smaller studs & many valuable agricultural properties which will also have this mine in their back yard.
1023.	- Air Quality - Cumulative - Noise	Public Evans	P15	We personally, continually clean black dust out of our home & can hear the operations at Wambo most nights of the week. We put up with this & don't complain as we live near a mining area, but how far can it go.

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
1024.	• Cumulative • Human Health • Social	Public Evans	P15	How far before the cumulative health & social impacts eventually destroy our rural communities? How far before there are serious effects on people's health social wellbeing? Who will be liable when this happens?
1025.	• Cumulative	Public Evans	P15	I am not an environmental activist nor am I anti mining as I have worked in the mining industry all my life. We currently have a mining industry here that is sustainable where the surrounding communities can have a reasonable lifestyle. This new round of new mine proposals will defiantly destroy all of this. Drayton South, Nucoal, Bickham & the Ashton Extension spell total disaster for our rural communities.
1026.	• Agriculture • Cumulative • Economics • Social	Public Griffiths	P16	I write to submit an objection to the Drayton South proposal referred to above. I am an employee of the racing industry and have been directly and indirectly involved and associated with the racing industry in Australia throughout all of my life. I am currently employed by a racing stud located in the Hunter Valley and I am very concerned about the effects that mining is having on the industry in the region, and the future viability of employment in the industry as a result. The nature of my concerns are detailed as follows:
1027.	• Agriculture • Economics • Social	Public Griffiths	P16	Understandably, the racing and through breeding industry nationwide, as with most industries, is vertically integrated and as such very sensitive. The flow on effects of a reduction in functionality is felt across the industry and these effects are most apparent when concentrated in a specific region, such as the Hunter Valley. As has surely been stated before, the loss of profit and negative effects on local businesses in the equine industry from the influence of the mining industry in the Hunter are enormous. This concerns me greatly as an employee of the racing industry and a horse sport enthusiast. Industries such as saddleries, farriers, veterinary practices and feed providers stand to be further affected adversely on a local and national scale if this project is approved.
1028.	• Agriculture	Public Griffiths	P16	The equine industry has a long and successful history in Australia and no more prominent than in the Hunter Valley. The equine industry is recognised as being the horse capital of Australia and the region has a world renowned reputation of excellence for producing the highest grade of thoroughbred stock. Furthermore, due to the intrinsically linked nature of the various facets of the equine industry this has meant that pursuits such as Three Day Eventing, Dressage, Camp Drafting and local pony clubs have flourished in the Hunter Region. All of these elements of horse sport stand to be negatively affected if further industrialisation of the region continues. The Hunter needs to be preserved as it is a significant historical and cultural hub in Australia, a

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
				country that significantly lacks a long lived history of its own.
1029.	Cumulative	Public Griffiths	P16	There are many concerns across the communities of the Upper Hunter region, and across Australia, that the Precautionary Principle has not and is not exercised with regard to the coal industry. Understood as signifying that a 'lack of full scientific certainty should not be used as a reason for postponing a measures to prevent degradation of the environment where there are threats of serious or irreversible environmental damage'.¹ The damage being caused to the Hunter region by individual coal projects is further propagated from the lack of analysis into the cumulative effects on the region as a whole. When it is also considered that a coal fired power station is located within a short distance of this proposed project the concern is increased yet again. It is a barbaric concept to think that ignorance could destroy an environment which deserves to be preserved and nurtured for generations to come. ¹ Environmental Protection and Biodiversity Conservation Act 1999 (Cth), section 391(2)
1030.	- Air Quality - Human Health - Surface Water	Public Griffiths	P16	Negative effects of coal mining that are referred to frequently are issues as air quality, effects on surface water and the related adverse health effects on the residents of the region. However, a lesser discussed issue is the unseen but felt effect on the residents of the Hunter who are opposed to mining projects eating up their beloved farm land and natural landscapes with no hope of solution or representation. The situation for these people is one of pure oppression and underrepresentation. The statutory allowance for a state facilitated company to be able to take useful land that is supporting a livelihood and culture, is little better than an extension of imperial colonialism at its worst. Including the deluded justification that corrupt and immoral actions are somehow justified based on a capitalist concept of profitability surpassing the importance of justice and democracy. The farmers, residents and people in general opposition to this project have rights and deserve to have their opinions heard and acted upon in this matter.
1031.	General	Public Griffiths	P16	I hereby submit my objection to the Anglo American Drayton South open cut coal proposal. As is evident from the above points, the objections are heartfelt, genuine and widespread across the region. One only needs to attend a meeting of community members in the region at a local gymkhana or local race day to hear on a grass roots level what the concerns are of the residents of the district.
1032.	Air Quality	Public Halloran	P17	I am writing as a concerned landholder who is a neighbour to the existing Drayton Mine, and close to Mount Arthur Mine and the proposed Drayton South extension. I object to the Drayton South open coal mine project.

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
				My reasons for objecting to this proposal are as follows: My property is located on Pamper Drive adjacent to land owned by Drayton Coal. We currently experience a lot of dust to the extent that dust visibly accumulates on surfaces both inside and outside. After these surfaces are cleaned, they are coated with dust again within twenty four hours. This level of dust is unacceptable. A mine extension will further increase the particulate pollution that we are exposed to. Loretta, my wife, is very ill and I am her sole carer. She is in my full time care. Her health problems dictate that she must live in an air-conditioned room at all times. When she is exposed to the dust her condition worsens. I will not take her outside of the house because the high dust levels from adjoining mines will make her seriously ill. The dust is pervasive and adversely affects our quality of life.
1033.	Noise	Public Halloran	P17	We are currently subjected to consistent, regular and unacceptable noise from mining, coal processing and train movements. An extension will increase this noise significantly.
1034.	Surface Water	Public Halloran	P17	Water pollution from the neighbouring property operated by Drayton Coal has flowed onto my property on a number of occasions, once from a faulty septic system. The runoff water that flows onto my land is sludgy, smelly and has silted up my dam. Cattle will now not drink from this dam. The dam has been rendered unusable.
1035.	- Air Quality - Noise	Public Halloran	P17	The existing Drayton mine operators have not taken steps to ensure that existing dust and noise problems are reduced. The dust has reached hazardous levels. Drayton Coal is not compliant with guidelines and present mitigation methods are not working. The pollution we are subjected to is unreasonable intrusion into our lives. A mine extension will increase the pollution we are subjected to significantly, further affecting our quality of life.
1036.	- Air Quality - Cumulative - Human Health	Public Halloran	P17	It is well known that poor air quality can affect human health. This mine will contribute significantly to particulate pollution in the region. Increased exposure to particulate pollution is associated with increased adverse health outcomes, even if the levels are below current guidelines. The cumulative impacts of dust generated from mines have resulted in Muswellbrook Shire having the highest number of emergency hospital admissions for asthma and respiratory illness in the Hunter New England Health Region. This is detailed in the report NSW Department of Health (2010) Respiratory and cardiovascular diseases and cancer among residents in the Hunter New England Area Health Service report:

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
				http://www.health.nsw.gov.au/pubs/2010/pdf/hne_respi_cardio_disease.pdf
1037.	- Air Quality - Cumulative - Equine Health - Human Health	Public Halloran	P17	There is a lack of research into the cumulative and long term impacts of the effects of coal mining on human, animal and plant health. Until such research is completed, and changes to coal mining practice made to minimise health effects, coal mining expansion and new mines plans should be suspended.
1038.	General	Public Halloran	P17	Given Drayton Coal's current poor efforts at mitigating pollution I have no confidence that their efforts to mitigate further pollution would be successful. The mine expansion should not be approved.
1039.	- Greenhouse Gases - Climate Change	Public Hayes	P18	We object to this application, and here are some of the reasons for our objections: It will contribute to Climate Change and Global Warming and: - Proposal to extract 119 million tonnes of coal over 27 years - Produce additional 0.31 million tonnes of greenhouse gas emissions per year
1040.	- Air Quality - Noise	Public Hayes	P18	Will cause air and noise pollution.
1041.	Ecology	Public Hayes	P18	Will destroy 1,928 ha including 107 ha critically endangered Box-Gum Woodland derived native grasses and 398 ha native forest, woodland and shrub land.
1042.	Ecology	Public Hayes	P18	The proposed biodiversity offset property is in a different bioregion approx 70kms to north of mine proposal.
1043.	- Groundwater - Surface Water	Public Hayes	P18	Will impact on Hunter River, Saddlers Creek and Saltwater Creek
1044.	- Ecology - Groundwater	Public Hayes	P18	Will impact on groundwater dependent ecosystems, particularly Red Gum and River Oak
1045.	Final Landform	Public Hayes	P18	Will leave post mining final void that will take approx 1,000 yrs to reach equilibrium
1046.	Agriculture	Public Hayes	P18	Is adjacent to seven thoroughbred horse studs including Coolmore and Woodlands, eleven dairies, four vineyards (3 with wineries), an olive grove with processing plant

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
1047.	Economics	Public Hayes	P18	Economic assessment is not rigorous
1048.	Agriculture	Public Joyner	P19	I believe the proximity of this proposed mine to the existing equestrian industries particularly Coolmore and Darley Horse Studs is of major concern. I also believe that an addition to the already large coal exploiting industries (80%) in the Muswellbrook shire threaten the survival of more sustainable activities like the thoroughbred industries, viticulture and olive production which offer long term opportunities once coal extraction has passed in the next couple of decades.
1049.	Social	Public Joyner	P19	The village of Jerry's Plains to the east of this proposed extension is also in danger of complete encirclement by coal mining activities and its future as a pleasant rural hamlet servicing the local community will be extinguished. Balance is required and some restraint on coalmining activities is well overdue.
1050.	- Air Quality - Cumulative - Human Health	Public Kaye	P20	It is well known that poor air quality can affect human health. This mine will contribute significantly to dust pollution in the region. The cumulative impacts of dust generated from mines have resulted in Muswellbrook Shire having the highest number of emergency hospital admissions for asthma and respiratory illness in the Hunter New England Health Region.
1051.	- Air Quality - Human Health	Public Kaye	P20	The following quotes can be found in the NSW Department of Health (2010) Respiratory and cardiovascular diseases and cancer among residents in the Hunter New England Area Health Service report, retrieved from: http://www.health.nsw.gov.au/pubs/2010/pdf/hne_respi_cardio_disease.pdf "In the period 2007 to 2009, 0-35-year-old people resident in the Muswellbrook postcode had higher rates of emergency department presentations for both asthma and overall respiratory illness than the remainder of HNEAHS [Hunter New England Area Health Service] and Sydney." (p.11) "For rates of asthma presentations, residents in the Muswellbrook postcode ranked highest among people aged less than 35 years of age." (p.12) "Singleton and Muswellbrook local government areas have higher rates of cardiovascular disease hospital separations than all of Hunter New England Area Health Service (HNEAHS) or NSW." (p.19) "Data on hospital separations are often used as indicators of morbidity. However, they are imperfect measures as high rates may reflect not only serious morbidity but inadequate access to primary

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
				care..." (p.19)
1052.	Air Quality	Public Kaye	P20	The nearest large town, Denman, does not have an Air Monitoring Station that is part of the Upper Hunter Air Quality Monitoring Network. An Air Monitoring Station needs to be placed at Denman so that air quality can be monitored before this mine proposal is considered. Residents of Denman want to know how they are impacted by coal dust and to be alerted when dust levels reach hazardous levels.
1053.	- Air Quality - Cumulative - Equine Health - Human Health	Public Kaye	P20	There is a lack of research into the cumulative and long term impacts of the effects of coal mining on human, animal and plant health. Until such research is completed, and changes to coal mining practice made to minimise health effects, coal mining expansion should be suspended.
1054.	Tourism	Public Kaye	P20	Accommodation for tourists is negatively affected by mines contractors booking out accommodation. These accommodation bookings do not contribute to the tourism economy as these contractors do not visit tourist attractions. Money spent by business on tourism advertising is wasted when there is no accommodation for tourists
1055.	- Agriculture - Economics	Public Kaye	P20	The economic impact on non-mining related business in the region will be a negative one. This mine will be adjacent to seven thoroughbred horse studs including Coolmore and Woodlands, dairies, vineyards, and an olive grove. Additional coal mines deters further and new investment in farming enterprises as the public perception is that these industries should not be placed next to coal mines. Some of these industries are considering relocation as a mine operating close by will change the environment so that it is no longer fits their business model. Additional coal mines and mine expansions are squeezing agricultural investment out of the region.
1056.	- Agriculture - Economics	Public Kaye	P20	Effectively, a coal mine sterilises an area around it for investment. The area around coal mines is not seen as an area worth investing in as it may in the future be subject to mine expansion. Rural industries are looking for land in areas where there are no coal mines.
1057.	- Agriculture - Air Quality	Public Kaye	P20	Being located next to a coal mine (and hence subjected to the air, noise and light pollution) has a negative impact on the public perception and reputation of rural industries. As one winemaker recalled to me, when he told a member of the public at wine tasting in Sydney that he was located in the Upper Hunter Valley the

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
	- Noise - Visual			response was "isn't that where all the coal mines are?".
1058.	- Agriculture - Economics - Social	Public Kaye	P20	Muswellbrook Shire needs to maintain a mix of industries to buffer it when the mining industry declines. Part of the Shire needs to be kept mine free so that other rural industries can thrive, and be a source of employment and wealth when the coal prices fall and mines employment numbers fall.
1059.	Social	Public Kaye	P20	Many skilled workers trained by non-mining industries are poached by the mining industry who offers more attractive salaries. The effect of this on non-mining industries is destabilising.
1060.	- Agriculture - Groundwater - Surface Water	Public Kaye	P20	Water is a limited resource. Water is being drawn away from Agriculture to support the expanding coal mining industry. This is to the detriment of Agricultural industries. The proposed mine will impact on the Hunter River, Saddlers Creek and Salt Water creek. The Hunter already has many mines pumping salty mine water in the river an additional mine will further stress the river by requiring water and disposing of mine water.
1061.	Rehabilitation	Public Kaye	P20	Mine rehabilitation research is still in its infancy. As open cut mining has only been impacting on the region in the last thirty years, we still do not know the long term problems that rehabilitated open cut mines face and if they can be returned to long term agricultural use.
1062.	Social	Public Kaye	P20	Housing impact: The Housing and rent markets are stressed by the growth of the mine industry as they have not kept up with the expansion of the mine industry. Any further mine development will further stress the housing sector in the region.
1063.	- Economics - Social	Public Kaye	P20	Impact on assets located in proximity to the mine: Properties located near the mine become stranded assets that owners cannot sell, or have reduced value, due to proximity to the mines. For many land owners this property is their superannuation that they will retire on. Not being able to sell to retire causes them to keep working in their industry rather than being able to retire. This results in frustration and depression.
1064.	- Agriculture - Economics	Public Kaye	P20	Some farmers own several properties located within a region. When one of these properties is bought by a mining company it reduces the viability of the overall operation, and the mines do not compensate for the loss of that asset in the overall context of the overall operation.

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
1065.	• Social • Traffic and Transport	Public Kaye	P20	Public infrastructure is currently stressed by the demands of the coal mining industry. Road infrastructure is degrading faster than it can be maintained. The community of Denman has not been able to recruit a doctor for its Hospital for the last two years. The increase in population is not being met with an increase in medical services available to residents.
1066.	• Agriculture • Economics • Social • Tourism	Public Keeping (Two Rivers Wines)	P21	The proposed mine will directly impact one of the Upper Hunter's key vineyards, Hollydene (previously Arrowfield Wines) and knock on effect will damage the reputation of the Upper Hunter Wine Industry as a whole. The wine and tourism industries need a critical mass to survive and the removal of some of our more prominent vineyards impacts on the viability of the industry and the credibility of this area as a serious wine region.
1067.	• Agriculture • Economics • Social • Tourism	Public Keeping (Two Rivers Wines)	P21	This development will result in the significant loss of agricultural land and a reduction in the agricultural diversity of the area. Our region boasts some of the world's best thoroughbred studs, wineries and a vibrant agricultural sector which enjoys secure access to irrigation water and some of the most fertile land in the country. All of these industries contribute to the prosperity of our community and if the dominance of mining in this area is not brought into some sort of balance, we risk losing these industries to this area for ever.
1068.	• Cumulative	Public Keeping (Two Rivers Wines)	P21	The Upper Hunter is already a very large coal producer with a high concentration of coal mines in the area. We do not believe that the cumulative impacts of mining in the Upper Hunter have been fully considered.
1069.	• Air Quality • Cumulative • Human Health • Noise • Traffic and Transport	Public Keeping (Two Rivers Wines)	P21	This mine proposal will further impact on the areas dust and noise pollution, leading to further deterioration of the local environment. Large vehicular traffic and rail movements will also be dramatically increased. These impacts will also affect the health and wellbeing of the local communities.
1070.	• Agriculture	Public Keeping (Two Rivers Wines)	P21	The agricultural impact assessment does not address the impacts on neighbouring farms or land uses within the area. This is a serious deficiency which needs to be corrected.

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
		Rivers Wines)		
1071.	- Agriculture - Tourism	Public Keeping (Two Rivers Wines)	P21	There are numerous tourism development proposals (including projects at Two Rivers, Hollydene and Cruikshanks) that are constrained by current levels of uncertainty created by existing and proposed mining developments. The proposed mine will have a serious impact on the future viability of our industry, which has been already seriously impacted by the rapid expansion of the mining industry in recent years.
1072.	- Agriculture - Tourism	Public Keeping (Two Rivers Wines)	P21	The Drayton South mine is located at the gateway to the Upper Hunter wine region and directly opposite an existing vineyard/winery operation (Hollydene Vineyard) where significant tourism investment is planned and being undertaken. As much as the mining industry would like to believe that mining and wine tourism can co-exist, that is certainly not the view of the wine tourism industry
1073.	Agriculture	Public Keeping (Two Rivers Wines)	P21	This proposed mine is within the Critical Industry Cluster area for the viticulture and thoroughbred industries as defined in the Upper Hunter Strategic Land Use Plan. If this mine is allowed to proceed it will undermine this document and make a mockery of the entire land use planning process.
1074.	- Agriculture - Economics - Social	Public Keeping (Two Rivers Wines)	P21	We are dismayed that the socio economic assessment does not take into account the impacts on thoroughbred and wine industries. Apart from being misleading this assessment is totally deficient by assuming no impact on alternative agricultural activities. It seriously overestimates the next economic benefits to the state from this project. The company should be forced to resubmit its socio economic analysis to include sensible assumptions about the impact this project will have on other land uses and sustainable agricultural industries in the area.
1075.	- Air Quality - Human Health	Public Keeping (Two Rivers Wines)	P21	As landholders and concerned citizens we are seriously concerned about the impact of dust from this mine to the overall health and air quality of our region. In this respect, we strongly request that a cumulative air quality and health impact assessment resulting from this project and other existing mining operations before a decision is taken regarding this project.
1076.	- Agriculture - Groundwater	Public Keeping (Two Rivers)	P21	The Hunter River is the lifeblood of the Viticulture industry in the Upper Hunter. Any industry that threatens or pollutes and damages this supply of water will threaten the future viability and reputation of the industry. We are not confident that appropriate attention has been paid to this aspect in the environmental assessment.

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
	Surface Water	Wines)		
1077.	General	Public McKee	P22	I note that renewable energy sources have not been adequately researched or comparably costed. I'd also suggest that Australian's are capable of doing more than digging holes in the dirt, and having its NSW State Department employees investing hours of time reviewing applications that seek to rip the place up, lie about the long-term benefits to the community and mess with our water systems.
1078.	- Air Quality - Human Health - Noise - Social	Public McKee	P22	This proposal will cause significant air and noise pollution. This is proposed to be within 10kms of the residents of Muswellbrook alone. The preliminary 2011 population of Muswellbrook Shire is 16,923 people. I note that in the report commission by Beyond Zero Emissions 'The Health and Social Impacts of Coal Report', one of the key findings was that: "There are clear indications from the international health research literature that there are serious health and social harms associated with coal mining and coal&#208;fired power stations for people living in surrounding communities." The paper recommended a significant buffer between people and mining operations. I don't believe the employment of 55 people can be balanced against potential health risks to 16,923 people. Do you? I ask you to imagine your entire family, loved ones and social network living there, and then begin to contemplate recommending this be approved. I note the proximity of fugitive dust emissions that may be swept over the nearby Wollemi National Park and the lack of data relating that threat to particular plant species that must have full light in order to regenerate. Claims that the company can restore the area to (almost) its previous state are absolute rubbish. What the company proposes is veneer work at best. I note that while the mine and restoration process take place, there is no temporary nursing home for native wildlife. The result is, a higher number of native wildlife will be left to compete for survival in a smaller, nearby area and the result will be a diminished wildlife population. The 107 ha critically endangered Box-Gum Woodland derived native grasses and 398 ha native forest, woodland and shrub land cannot be replaced. While ever your department continues down a path of thinking it can batter off any endangered item, we end up getting to a place of battering the last one percent of the last one percent. This will negatively impact on the health of the Hunter River, Saddlers Creek and Saltwater Creek. We might
1079.	- Ecology - Rehabilitation	Public McKee	P22	
1080.	Ecology	Public McKee	P22	
1081.	Groundwater	Public McKee	P22	

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
	Surface Water			turn to the gargantuan stuff around the Murray Darling and see it an example of why we should not consider approving anything that threatens our rivers and creeks.
1082.	Greenhouse Gas	Public McKee	P22	This project will produce additional 0.31 million tonnes of greenhouse gas emissions per year according the estimates provided. This does not take into account the amount of greenhouse gas emissions the product will create once used and I find this grossly unacceptable.
1083.	Agriculture	Public McRoberts	P23	I am writing to object to the Drayton South open-cut coal mine project. I am the owner and operator of The Hunted Gourmet, we have provided catering services in the Upper Hunter for nearly 25 years. Much of my business comes from the Thoroughbred Breeders of the region many of whom I have served on a long term basis. We are proud to have long associations with both Coolmore Stud (for whom we provide all corporate catering in both Jerry's Plains and Sydney) and Darley Stud (for whom we operate staff canteens at both their Woodlands and Kelvinside studs and whose clients we have catered for since Darley started operations in NSW at Collingrove in 2001. I employ 3 full time and 2 part time staff to service Darley's canteens. Other clients include Scone Race Club, Vinery Stud, Segenhoe Stud, and Yarraman Park Stud.
1084.	Agriculture	Public McRoberts	P23	Many local residents were encouraged by the coalition's election promises to redress the balance and consider the cumulative impacts of mining developments, yet the SRLUP is a severe disappointment and offers little if any protection to our best land and the industries that work it, the Gateway has had the gate removed so it is likely more than a rubber stamp and access ramp. There is no mechanism to address cumulative impacts; projects are still being assessed on a case by case basis as they come before the Department of Planning. The opportunity to address these issues has been squandered pathetically and the great plan watered down into irrelevance by the Minerals Council.
1085.	- Agriculture - Air Quality - Groundwater - Human Health - Social - Surface Water	Public McRoberts	P23	Co-existence between mines and rural industries in the Upper Hunter is a misleading furphy. The impacts on roads, labour, health, services, amenity, air quality, water quality and availability and the direct competition for land just aren't being considered. The case study of Edinglassie Stud is frequently pushed by the Minerals Council and features on their website and that of BHP Billiton.

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
	Traffic and Transport			
1086.	Agriculture	Public McRoberts	P23	Mick and Michelle Talty who lease Edinglassie from BHP Billiton are popular and highly regarded members of our community yet it is also widely understood that their Lease contains a 'no nuisance' clause which specifically precludes the Taltys from providing any adverse on the record commentary or Complaints regarding the impacts of their landlord's and neighbour's business activities. The 'no nuisance' clause is a standard insertion to lease agreements with mining companies. Coolmore have Drayton South across the road and Nucoal attempting to mine beneath them, Darley have Drayton South and Spur Hill on their doorstep. These projects will render their land holdings untenable. Mitigation and management measures fail everywhere else so why would they work here? Where do these farms move their operations to? Darley could retreat to Kelvinside but face the same proponent with another open cut project in close proximity (4 kilometres) and that same land holding is deemed an area for underground coal exploration. Coolmore have looked at every available property in the Upper Hunter but none has the land acreage and water that they need for their operation, nor the security that the same thing will not happen to them again in the future. In their SRLUP submission, Anglo American focused on their two NSW projects Dartbrook and Drayton South. This submission contains multiple errors and factually inaccurate information. The section titled 'PART C Submissions on Anglo American Projects AND the extent of the proposed Critical Industry Cluster'. 7.1 The extension of the equine cluster into the area of Drayton South is not appropriate. The equine CIC reflected the situation of Coolmore Australia and Darley Australia Woodlands. These two stud companies are the largest in terms of both land holding and importance to the industry and represent significant investment in the Australian and NSW thoroughbred industry by the two largest entities in the global racing industry. To place these two entities at risk effectively places the entire NSW thoroughbred industry at threat as Darley and Coolmore are the two largest of the four major stallion standing farms (the other two being Arrowfield and Vinery), although the Darley stallions are based at the Aberdeen property Darley Kelvinside. 7.2 There is no "unique combination of factors" which sets this area apart for the equine industry. This area has been a mining precinct since well before the horse studs commenced there and investment decisions
1087.	Agriculture	Public McRoberts	P23	
1088.	- Agriculture - Regulatory and Planning Context	Public McRoberts	P23	

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
				have been taken on that basis. 7.8 As is detailed in the Preliminary Environmental Assessment for the Drayton South Project, the area of Drayton South has been a mining precinct for many years. The area was originally approved for open cut mining with a development consent and mining lease granted to Pacific Power in the 1980s. This occurred before there were any material horse studs located in the vicinity. The development of the horse studs has post dated the establishment of the area of Drayton South (and its approval) as a coal mine. 7.9 Investment in tenements and lands comprising the Drayton South project was made on the basis of this history. 7.10 Any development of horse studs in the vicinity was (or should have been) done with full knowledge of the pre-existing mining approvals and resource.
1089.	Agriculture	Public McRoberts	P23	This is demonstrably untrue. Earlier in the submission (Points 2.6 - 2.10) Anglo trace the history of Drayton South back to "the 1940s" and detail that prospecting for coal began in the "late 1940s". Exploration allegedly "intensified during the 1960s and 1970s before authority to prospect (Authority 169) was granted to the Electricity Commission of NSW in 1979. In 1982 Mount Arthur South submitted an application approval for coal mining with development consent not granted until September 1986. A mining lease was not granted until 1989, a lease which lapsed through proponent inactivity in 1994, 3 years after the development consent had also lapsed for the same reason. Anglo American assert that this shows that the "area has been a mining precinct since well before the horse studs commenced there", however this ignores the facts of both the early and more recent history of both the Coolmore and Woodlands properties which pre-dates any coal mining precinct. To suggest otherwise is false and misleading and to do so in a submission to the State Government is an affront to responsible corporate governance.
1090.	- Agriculture - Air Quality - Blasting - Equine Health	Public McRoberts	P23	The Equine Health Impact Statement in the EIS is perhaps the most laughable, ludicrous, tenuous, spurious, pseudo-scientific bullshit I have ever read in my life. A cut and paste googleson that is perhaps best dissected by others with better placed qualifications than my own. Blasting may be beneficial for horses - an opinion Dr. Kannegeiter derives from the sales literature produced by the Swedish manufacturer of a vibrating floor pad! That's a good one. The fact is that the impacts from mining on horses in terms of dust exposure,

No.	Technical Aspect	Stakeholder	Submission Reference	Issue																				
	Noise			noise exposure and vibration exposure has not been adequately researched and should be independently carried out before any further assessment of this project. If approved this project will irreparably damage the Thoroughbred Breeding industry in NSW by forcing the two largest breeding operations from their current historical locations.																				
1091.	Air Quality	Public McRoberts	P23	As a long term resident of the Upper Hunter (I came here over 30 years ago to work at Segenhoe Stud) I have seen the changing nature of the valley and witnessed the detrimental impacts of the mining boom creep ever northwards. Air quality is of particular concern, only yesterday I drove back from Coolmore and came over Mount Arthur along the Edderton Road to see the thick dust blowing off the Mount Arthur and Bengalla mines. The air quality monitoring network masks these spikes with their rolling 24 hour averages but we residents feel their impacts. The Minerals Council talks up their members' best practice and "dialogues with the community" about how they're cleaning up their act yet they still blast when they want to and there is a net increase in un-rehabilitated land and overburden areas across our region, all of which leads to further deterioration in air quality.																				
1092.	Air Quality	Public McRoberts	P23	Dust. The NSW Government stated in a 2010 Environmental Report that "Managing dust from coal mines is important as it can impact local and regional air quality and adversely affect local amenity and pose a risk to public health" ¹ Although a colour photograph of a High Volume Air Sampler at Edinglassie is reproduced in the 2009 Mt Arthur AEMR, results and readings from this monitor have never been released publicly.																				
1093.	Air Quality	Public McRoberts	P23	Dust is monitored via dust deposition gauges at Edinglassie by both Mt Arthur (gauge DD16) and Bengalla (gauges D12A and D12B) with samples recorded and weighed monthly. The Air Quality Standards and Criteria for Particulate Maeer Concentration Standard for insoluble solids in deposited dust is 4 grams per square metre per month. The Table below lists the results for the three gauges at Edinglassie from 2009, 2010 and 2011 and gives the average, total and highest monthly reading for each year compared to the Air Quality Standard Criteria. <table><tr><th>Gauge</th><th>2011 Av</th><th>2011 Highest</th><th>2011 Total</th><th>2010 Av</th><th>2010 Highest</th><th>2010 Total</th><th>2009 Av</th><th>2009 Highest</th><th>2009 Total</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	Gauge	2011 Av	2011 Highest	2011 Total	2010 Av	2010 Highest	2010 Total	2009 Av	2009 Highest	2009 Total										
Gauge	2011 Av	2011 Highest	2011 Total	2010 Av	2010 Highest	2010 Total	2009 Av	2009 Highest	2009 Total															

No.	Technical Aspect	Stakeholder	Submission Reference	Issue									
				DD16	5.25g*	7.6g	63g*	4.1g*	8.2g	49.3g*	5.0g	11.3g	59.6g
				D12A	N/A	N/A	N/A	6.0g	28.8g	71.6g	3.9g	5.6g	47.2g
				D12B	N/A	N/A	N/A	6.5g	12.0g	78.1g	5.7g	8.9g	68.6g
				criteria	4.0g	4.0g	48.0g	4.0g	4.0g	48.0g	4.0g	4.0g	48.0g
				* Where samples have been reported as contaminated with insects and droppings and no result listed in the Mining company returns, I have used the Ash residue weight recorded for that given monitor in that month to provide a more representative figure. The true weight of the sample would have been higher (ash forming only one component of the insoluble solids collected).									
1094.	Air Quality	Public McRoberts	P23	In the AEMR, BHP Billiton explain away the ‘elevated dust depositional dust results’ for gauge DD16 by stating “ <i>This monitor is located on land owned by Mt. Arthur Coal and is used for management purposes only; it is not indicative of nearby privately owned residences</i> ” and that the monitor is “ <i>3.5ks from the nearest sensitive receptor</i> ” which will be a great comfort to their tenants at Edinglassie. By such means are BHPB able to claim that they have “ <i>achieved 100% compliance with air quality criteria</i> ”, even though the criteria for depositional dust was exceeded at Edinglassie in every month of 2011 except May and July, and the annual criteria was exceeded by 31%. In both 2009 and 2010 the criteria was exceeded in 7 individual months at this gauge.									
1095.	Air Quality	Public McRoberts	P23	Bengalla's two gauges have both produced some alarming results. The October 2010 reading for gauge D12A of 28.8grams is <u>620% above the concentration standard</u> . Gauge D12A exceeded the annual criteria in 2010 by 63% and gauge D12B by 49%. The table below shows pm10 and pm2.5 emissions from both mines. Figures from the National Pollutant Inventory available at www.npi.gov.au									
				Report Year pm type kg	2010 / 2011 pm10 kg	2010 / 2011 pm 2.5 kg	2009 / 2010 pm10 kg	2009 / 2010 Pm 2.5 kg	2008 / 2009 pm10 kg	2008 / 2009 pm 2.5 kg			

No.	Technical Aspect	Stakeholder	Submission Reference	Issue																						
				Mt. Arthur	4,200,000	110,000	2,600,000	270,000	7,100,000	300,000																
				Bengalla	1,900,000	26,000	1,600,000	23,000	1,700,000	25,000																
				Total	6,100,000	136,000	4,200,000	293,000	8,800,000	325,000																
¹ 'Management of dust from coal mines' NSW Government 2010																										
1096.	• Noise	Public McRoberts	P23	Noise is not measured at Edinglassie by BHP Billiton, but is measured by Bengalla via monitor NO3. Bengalla state “Monitoring at this location for BMC internal use only” . Bengalla monitor noise at 5 other locations each of which has a differing set of specified decibel limits as set out in the 2008 Bengalla Mine Modification Approval.																						
				The table below compares the noise levels measured in 3 categories quarterly at Bengalla in 2009 and 2010 against the highest specified limit in each category from the other 5 locations. Noise measurement units are decibels (dB). The ‘A’ weighing scale describes human response to noise.																						
				The table illustrates how noise levels at Edinglassie are routinely higher than the mandated highest limits for privately owned land, occasionally much higher.																						
1097.	• Noise	Public McRoberts	P23	<table><tr><th>Category</th><th>Day LAeq (dB A)</th><th>Night LAeq (dB A)</th><th>Night LA1 (dB A)</th></tr><tr><td>Edinglassie 2010 quarterly</td><td>44 50 68 47</td><td>39 40 46 41</td><td>46 46 52 46</td></tr><tr><td>Edinglassie 2009 quarterly</td><td>45 38 40 47</td><td>44 46 40 42</td><td>48 52 46 48</td></tr><tr><td>Highest limit</td><td>30</td><td>38</td><td>46</td></tr></table>							Category	Day LAeq (dB A)	Night LAeq (dB A)	Night LA1 (dB A)	Edinglassie 2010 quarterly	44 50 68 47	39 40 46 41	46 46 52 46	Edinglassie 2009 quarterly	45 38 40 47	44 46 40 42	48 52 46 48	Highest limit	30	38	46
Category	Day LAeq (dB A)	Night LAeq (dB A)	Night LA1 (dB A)																							
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Edinglassie 2009 quarterly	45 38 40 47	44 46 40 42	48 52 46 48																							
Highest limit	30	38	46																							
The 2010 3rd quarter average measurement of 68 dBA exceeds the highest limit set by the 2008 Bengalla Modification by 79%. 68 dB is the equivalent of a commercial petrol-engine generator at 7 meters.																										

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
1098.	Blasting	Public McRoberts	P23	<u>Blasting</u> Both Bengalla and Mt Arthur blasts are recorded on geophone monitors at Edinglassie. Although the 2010 Annual Environment Management Report for Mt Arthur features the same colour photograph used in the Edinglassie Case Study of their geophone (BP08) together with a thoroughbred mare and foal on the lawn near the homestead, results for this monitor were not included in that report and only partially in the previous years. This means that blasting results information for 2011, 2010 and 2009 at Edinglassie from both mines cannot be accurately collated.
1099.	Blasting	Public McRoberts	P23	However, from the information that is available it is apparent that Edinglassie is regularly rocked by blasts, with in excess of 100 blasts a year that exceed 100 dBL. In 2009 Mt Arthur initiated 15 blasts which resulted in ground vibration of more than 5 millimetres per second and 13 such blasts in 2011. In both those years there were 4 blasts exceeding overpressure of 115 (dBL) emanating from Mt Arthur. In 2010 there were 3 Bengalla blasts in excess of 115 (dBL) one of which exceeded 120 (dBL) and was reported. Nor are these the only issues of living next to open-cut coal mines as the photograph below demonstrates. The picture was taken in May 2010 from the Denman Road and shows Edinglassie Stud in the foreground and an orange plume drifting towards it from the Bengalla coal mine. A witness Robert Reid told the ABC that <i>"You'd swear to God it was a sunset coming out of the mine, that's how orange it was"</i>.
1100.	- Blasting - Human Health	Public McRoberts	P23	The plume takes its colouring from the presence of Nitrogen Dioxide (NO₂). The acceptable level of nitrogen dioxide in a plume is five parts per million and it turns orange-red when the concentration is between 50 and 250 parts per million and a deep red from 250 parts per million up. Nitrogen Dioxide is toxic by inhalation and a large scale pollutant. Researchers at the University of San Diego have suggested a link between levels of NO₂ and Sudden Infant Death Syndrome. It can also irritate the lungs and lower resistance to respiratory infection. Sensitivity increases for people with asthma and bronchitis. The National Pollutant Inventory lists combined Oxides of Nitrogen emissions from Bengalla and Mt. Arthur in reporting year 2010 / 2011 in excess of 2,300 tonnes.
1101.	Blasting	Public McRoberts	P23	A spokesman for Bengalla said the amount of fumes from the blast was an unusual event and is thought to have resulted from an interaction of water with the explosives.

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
1102.	- Agriculture - Blasting - Noise - Regulatory and Planning Context	Public McRoberts	P23	The Edinglassie Case study does not present a sustainable blue-print for the future of the Hunter Valley wherein coal mines and horse studs live side by side happily ever after. Indeed, careful consideration of the facts reveals the case study to be quite the opposite - it is a telling reminder of how vitally important the Strategic Regional Land Use Plan was to the ongoing commercial viability of the thoroughbred breeding industry in the Upper Hunter. Furthermore, subjecting tenants to quite shocking levels of pollution, blasting and noise whilst electively gagging them and limiting their rights to freedom of speech is behaviour few should be proud to brag about in a widely disseminated 'case study'. It is therefore hardly surprising that these tenants are actively looking to get out.
1103.	- Cumulative - Traffic and Traffic	Public McRoberts	P23	It will turn Edderton Road into the most dangerous road in country NSW and it will add further to the cumulative impacts of the mining industry in the Upper Hunter, all at a time when human induced climate change is rapidly approaching the tipping point.
1104.	- Agriculture - Cumulative	Public Moore	P24	This proposal is an additional mining operation in the mid Hunter Valley west of Jerry's Plains. This area in the Hunter Valley cannot with stand any more mining activities, people living and operating a sustainable Primary Production farm in this area are facing many challenges.
1105.	- Agriculture - Ground Water - Surface Water - Tourism	Public Moore	P24	Pollution and destruction of our water sources, - be it rivers, creeks, or underground streams, they are all important resources for the farming, thoroughbred, viticulture and tourism industries and also for the villages and communities without good quality water not even humans can survive.
1106.	- Air Quality - Ground Water - Surface Water	Public Moore	P24	We have grave concerns for the water that the mining proposal would need to use to subdue the dust, this water is usually high quality water that has run from the precious higher alluvium water streams down into the coal seams and then becomes contaminated.
1107.	- Agriculture - Economics - Ground Water - Human Health	Public Moore	P24	The EA fails to discuss the relative values of the local watercourses (Surface Water) from commercial aesthetic and ecological perspectives. Groundwater Impacts (GWI) and Agricultural Impact Assessment (AIA). The EA fails to address the combined effects to GWI from existing operations and the likelihood to be compounded by the impacts from proposed

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
	Surface Water			adjacent mining projects. The AIA is solely based on the site and the off-set site and the economic analysis does not address the impacts on the neighbouring farms. We are among the majority of people living in rural areas that use fresh rainwater for our drinking water this is a major concern to us with all the pollutants from the mining activities in the area. If you built a house in Singleton it is part of the requirements to have a rainwater tank installed, but you are not allowed to drink it, that said a lot for this mining town.
1108.	- Agriculture - Economics	Public Moore	P24	The impacts on farm productivity and land values for neighbouring properties have not been included. There is a need for Government and Government departments to realise that NSW needs a future in farming, without this we will not have a choice of where our food and our livestock's food comes from, you will need to purchase it overseas because at the rate that these mines are expanding, farming will be non-existence in NSW if this continues.
1109.	- Air Quality - Cumulative - Equine Health - Human Health	Public Moore	P24	The effects of dust on the air quality in the area, health surveys conducted in the area have found an alarming amount of asthma especially in children. Taking into account of all of the above industries if there are alarming levels of asthma in children what is another mining proposal in the area going to do to the health of these above industries' employees that work outdoors and to the animals (cattle, horses sheep etc.) and to the grapevines and horticulture that the community eat and drink. There have been no cumulative impact studies done to collect sufficient data to be able to make a sensible determination regarding the health effects upon the residents and animals of the area that are already exposed to high density coal mining. We would have thought that a precautionary principle regarding effects short and long term should be applied.
1110.	Economics	Public Moore	P24	With continuing to allow mining, the threat to the diversity of the area's economy, as mining drives out other sustainable industries and the long time employment they provide.
1111.	- Agriculture - Cumulative - Equine Health - Noise	Public Moore	P24	The impact of the additional noise from the mining proposal on the community and the neighbouring livestock has not been fully accounted for.

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
1112.	- Cumulative - Traffic and Transport	Public Moore	P24	The additional traffic & safety issue that now exists on these regional roads, the cumulative impact of an additional mine on the infrastructure in the area. The only new road infrastructure that happens is when mining companies want to mine our roads & then the local communities have to travel longer distances to go about their business. With this new proposal the Jerry's Plains community will have a longer trip to go to town in Muswellbrook.
1113.	- Air Quality - Cumulative - Human Health - Noise - Traffic and Transport	Public Moore	P24	As we said earlier this Drayton South proposal lacks consideration of all the cumulative impact of mines together in the area on dust, health, noise, traffic safety and the character of the area.
1114.	- Air Quality - Human Health	Public Munroe	P25	Both my parents grew up in Muswellbrook; I travel through there frequently. I know what the green dairy flats and the natural hills looked like, and I know the air was clear once. It is putrid now and Muswellbrook regularly tops the worst air quality in the state. I do not believe that you should be contemplating adding to this pollution and the health burden it causes.
1115.	Agriculture	Public Munroe	P25	Nor should this mine be allowed to impact on the traditional horse and wine industries – those that are left. It is ridiculous and unfair to permit a mine so close to seven thoroughbred horse studs, including Coolmore and Woodlands, eleven dairies, four vineyards (3 with wineries), and an olive grove with a processing plant.
1116.	- Air Quality - Cumulative - Ecology - Groundwater - Noise - Surface Water	Public Munroe	P25	Jerrys Plain's farms and families cannot cope with closer mining and more air and noise pollution. I know there are many environmental reasons why this mine should be rejected, and that the water and woodland damage will be long term and significant. But overall, it is the pollution that should make you reject it. No amount of sham conditions will help. Go to Muswellbrook and see for yourself. Enough is enough.
1117.	Cumulative	Public Snell	P26	In addition to concerns about the cumulative impact of an additional mine on the infrastructure in the area,

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
	Traffic and Transport			there are also concerns that key proposed intersection upgrades should be completed before the construction period for the mine commences to ensure it operates safely. The Edderton Road realignment will significantly impact my daily drive to and from my place of employment.
1118.	Air Quality	Public Snell	P26	Whilst the report states that ground-level concentrations will be minimised through monitoring and mitigation measures and best practice will be implemented, the study has not demonstrated that these will be sufficient to achieve compliance with the criterion.
1119.	- Air Quality - Cumulative - Human Health	Public Snell	P26	Concerns regarding the impact of continuing increases in mining dust on community health. - No cumulative impacts have been considered. - Precautionary principle regarding health effects short and long term should be applied; there is insufficient data to make a sensible determination regarding the health effects upon the residents of the regions that are already exposed to high density coal mining, particularly open cut.
1120.	- Agriculture - Economics - Social	Public Snell	P26	Land values and how mining would adversely impact upon them. The impact this mining proposal will have on neighbouring industries and community: thoroughbred industry is a key employer in the region and the project is right across the road from the two biggest studs. This will have flow on effects to the other producers in the region.
1121.	- Groundwater - Surface Water	Public Snell	P26	Pollution of water sources / water quality
1122.	- Cumulative - Economics - Social	Public Spur Hill Management	P27	Spur Hill Management supports Anglo American Metallurgical Coal's proposal due to: - Continuity of employment for the existing workforce at the Drayton Mine, and; - The continued contribution of Drayton as a member of the mining industry to regional investment and employment opportunities in NSW and, more specifically, the Muswellbrook region. Spur Hill Management recognises the potential opportunity for the sharing of infrastructure between the Drayton South Coal Project and the Spur Hill Underground Coal Project, including coal processing and coal transportation infrastructure. There are significant benefits to avoiding infrastructure duplication including economic efficiencies and

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
				environmental benefits associated with a reduction in cumulative impacts in the region. Spur Hill Management requests the consideration of the consent authority to the opportunities for future infrastructure sharing and efficiencies between proposed mining operations in the area. This approach is consistent with a consideration of cumulative impacts at a regional level.
1123.	- Air Quality - Cumulative - Greenhouse Gas - Noise	Public Thompson	P28	The new mining will increase greenhouse gases and add to noise and air pollution.
1124.	Ecology	Public Thompson	P28	The new mining would destroy 1,928 hectares including 107 ha of critically endangered Box-gum Woodland, native grasses and 398 ha native forest woodland and shrub land.
1125.	Groundwater	Public Thompson	P28	Of course there will be effects on the water tables and the time for the landscape to recover, estimated at 1000 years.
1126.	- Air Quality - Ecology - Soil and Land Capability	Public Wales - Brown	P29	The disruption of the soil ruins existing ecosystems, enabling weed species to run rampant which affect farms across the entire region, and this is only where the toxins escaping from mine blasts haven't ruined the soil completely.
1127.	- Air Quality - Non-Aboriginal Heritage	Public Wales - Brown	P29	Aside from the continued and increased air and land pollution, the destruction of a landscape that is rich to my view of cultural heritage, this country is my legacy to my children and grandchildren and it is being destroyed.
1128.	- Agriculture - Non-Aboriginal Heritage - Social	Public Wales - Brown	P29	My family have evidence of living in this area since the late 1800's; our farm has been part of the family for over four generations. In trying to describe to you the activities I undertake in this area I could stop at simply farming and recreation but my relationship with the land goes deeper than that, that landscape forms an integral part of my identity and the community that is being ripped apart by mining leases and contract workers had been the social fabric I relied on to cope with living in a rural area- we are increasingly losing the community bonds that made this place my home. Cracks in historical buildings are just the tip of the iceberg

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				on what damage is being done, as if making it less appealing to tourists was necessary after making it so unliveable.
1129.	- Agriculture - Human Health	Public Wales - Brown	P29	I think it is well known in the area the damage that these mines are doing to our health, mentally and physically and the strain it puts on existing resources. I am genuinely concerned that to allow continued growth of these operations in our region will ultimately harm our productivity and capacity as an area. These developments affect my heritage and my family and I sincerely hope that you are doing everything within your power to stop this.
1130.	Surface Water	Public Wall	P30	The EA fails to discuss the relative values of the local watercourses from commercial, aesthetic and ecological perspectives.
1131.	Cumulative	Public Wall	P30	The EA fails to address the cumulative effects from existing operations and are likely to be compounded by the impacts from proposed adjacent mining projects.
1132.	- Agriculture - Economics	Public Wall	P30	The economic analysis does not address the impacts on the neighbouring farms. The assessment is solely based on the site and the off-set site.
1133.	- Agriculture - Economics - Social	Public Wall	P30	The assumed value of coal in the analysis appears high given a 27 year project time span. The impacts on farm productivity and land values for neighbouring properties have not been included. The assumptions around the impact on labour appear inconsistent with extremely low unemployment rates of the neighbouring towns.
1134.	- Agriculture - Cumulative - Social	Public Wall	P30	No serious consideration is given to assessing and addressing the cumulative effects of this project on agricultural industries or to the impact of a larger population or demand on housing affordability, supply and demand for community services and facilities.
1135.	Soil and Land Capability	Public Wall	P30	The criteria for assessing the land suitability has not been specified in the report.
1136.	- Air Quality - Rehabilitation	Public Wall	P30	Lack of information on the visual changes on the site in the initial years. The mapping makes it difficult to full assess where the bund will be positioned. What will be the impact of the bund on the local microclimate, wind directions etc. The impact of dust and lighting to the local community is only briefly addressed at the end of

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
	Visual			the impact assessment. Measures to mitigate the visual impact of the construction of the bund include progressive tree planting however no detail is given as to likely success of this, strategy if survival rates are low, maturity profile of trees being planted etc.
1137.	- Blasting - Equine Health - Human Health - Noise	Public Wall	P30	The impact of blasting on the community, neighbouring livestock and continued and incremental increase in rail noise is not fully accounted for.
1138.	- Cumulative - Traffic and Transport	Public Wall	P30	In addition to concerns about the cumulative impact of an additional mine on the infrastructure in the area, there are also concerns that key proposed intersection upgrades should be completed before the construction period for the mine commences to ensure it operates safely.
1139.	Air Quality	Public Wall	P30	Whilst the report states that ground-level concentrations will be minimised through monitoring and mitigation measures and best practice will be implemented, the study has not demonstrated that these will be sufficient to achieve compliance with the criterion.
1140.	Ecology	Public Wall	P30	The competition resulting in the nearby farm and woodlands from the addition of new species from the project site would result in high levels of competition for food and shelter.
1141.	- Air Quality - Human Health - Greenhouse Gas - Noise	Public White	P31	This proposal to extract 119 million tonnes of coal over 27 years will cause noise and air pollution, adding to the deleterious health effects already suffered by the residents who live in or near that area, and it will produce an additional 0.31tonnes of greenhouse gas emissions per year. The latest news on climate change is so worrying that if the government is serious as serious as it says it is about the matter it must reject this mine proposal.
1142.	Ecology	Public White	P31	In addition the mine will destroy 1,928 ha of vegetation including 107 ha of critically endangered Box Gum Woodland and 398ha of native forest, woodland and shrub land. To add insult to injury the proposed biodiversity offset is in a different bioregion about 70kms to the north of the mine proposal. How is this a meaningful or fair offset?
1143.	Agriculture	Public White	P31	The mine is adjacent to seven thoroughbred horse studs, eleven dairies, four vineyards and an olive grove

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
	- Economics - Social			with processing plant. The economic benefits of this mine added to its environmental damage can't outweigh the overall social and economic pluses of the diverse agriculture of this area.
1144.	- Groundwater - Surface Water	Public White	P31	When the inevitable adverse impacts on the Hunter River, Saddlers Creek and Saltwater Creek are taken into consideration the government has no choice but to reject this proposal.
1145.	- Cumulative - Human Health - Noise - Visual	Public Confidential 7	P32	I object to this approval. No conclusive work has been conducted to thoroughly assess the cumulative impact of mining in the Hunter Valley. This mine will be visible and audible to my residence. My son suffers from asthma already. What impact will this mine extension have on his health?
1146.	Agriculture	Public Confidential 8	P33	I am a landowner at nearby rural property used for cattle grazing. We have farmed cattle on our property for approximately 95 years.
1147.	Groundwater	Public Confidential 8	P33	We rely upon underground water for our stock. The proposed coal mine may affect this water.
1148.	- Air Quality - Human Health	Public Confidential 8	P33	We rely upon tank water for our drinking water. The dust from the proposed mine would fall on our roof & contaminate our drinking water with pollutants & heavy metals such as lead.
1149.	- Agriculture - Regulatory and Planning Context	Public Confidential 8	P33	The proposed mine is completely incompatible with the existing agricultural & equine industries in the vicinity.
1150.	- Air Quality - Human Health	Public Confidential 8	P33	I believe the proposed coal mine will destroy the area forever. The health and air quality effects upon local people will be enormous. It should never be permitted next door to coolmore stud.
1151.	Agriculture	Public Blake	P34	I am writing as a concerned landholder, business owner and resident to object to the Drayton South Open Cut Coal Mine Project. My main cause for concern is that increasingly close proximity, very large scale open cut coal mining operations are not compatible with my current MSA (Meat Standard Australia) approved livestock production for human consumption. Compared to the mining industry it is a very clean and green land use and income.

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
1152.	• Agriculture • Air Quality • Groundwater • Surface Water	Public Blake	P34	It is becoming impossible to live and produce food in this area due to the impact of the surrounding coal mines. Water quality and air quality is so degraded and polluted it is becoming unliveable, affecting the young children most severely.
1153.	• Agriculture	Public Blake	P34	Traditional farming land holders such as myself, being highly productive with a long history of production are being forced off the land as coal mine are approved by this government. This history, this important food production and these lives mean nothing to today's government.
1154.	• Agriculture • Economics • Social	Public Blake	P34	If Drayton Open Cut Mine and nearby Spur Hill Coal Mine are approved by this government it means we will have no alternative, we will inevitably be forced from this land away from this land, away from our lifestyle, away from our income. Our future will be thrown on the scrap heap, what a wasted life after over 100 years.
1155.	• Agriculture • Cumulative • Tourism	Public Bray	P35	This open Cut Mine would be adjacent to the iconic Darley Woodlands Thoroughbred horse stud, which is one of our important tourist attractions. It is feared by myself & others in Denman that this stud could cease to operate on its current location with a coal mine so close. It would have the cumulative affect of an open cut mine on every main eastern entrance to Denman.
1156.	• Cumulative • Social	Public Bray	P35	Every new mine adds to the pressure of already stressed community services such as Emergency Services, Hospitals & Medical services, schools & roads, skill shortages, affordable housing. This problem becomes a major problem when we have an excessive number of mines in a small area such as the Upper Hunter.
1157.	• Air Quality • Noise	Public Doherty	P36	We feel we are greatly impacted by the dust at Drayton and Mt Arthur mine. We live about 2-3km away, it is not just general dust it is black coal in our home. It is not good health wise. They keep saying they are in there range. If that is so it needs to be lowered. So close to our home, I tried to take photos but it does not show up, someone needs to see for themselves how bad it is and noise is not much better.
1158.	• Greenhouse Gas	Public Edwards	P37	It will produce an additional 0.31 M tonnes of greenhouse gas emissions each year
1159.	• Groundwater • Surface Water	Public Edwards	P37	Will impact on water of the Hunter River, Saddlers Creek and Saltwater Creek

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
1160.	Groundwater	Public Edwards	P37	It will leave a post mine final void that will take approx 1,000 years to reach equilibrium. Enough is enough.
1161.	Agriculture	Public Edwards	P37	Will impact greatly on thoroughbred horse studs nearby vineyards and dairies
1162.	- Air Quality - Cumulative - Noise	Public Edwards	P37	Will add to current air and noise pollution that residence endure
1163.	- Air Quality - Human Health	Public Monro	P38	I am writing to oppose the opening of Drayton South mine, application no.11-0062. As I write this submission, I can smell the sulphur stench from the existing Drayton mine coming into my house. I live about 50 km from the source of the smell. It is obvious to me that existing regulations regarding sulphur dioxide production by open cut coal mines is NOT working. The EPA choose to do nothing to curb these frequent odour events. Sulphur dioxide (and other toxic gasses) are an OH&S issue in NSW underground mines, and the mine must look after its employee's health...However open cut mines can release these same toxic gasses into the atmosphere where they become a public health issue, paid for by the public, the mine pays nothing for the damage it does. This situation is wrong. As this proposed mine will likely be part of the Greter Coal Measure, it will have the same potential to spon com as other Greter coal measure mines (sulphur rich).Existing guidelines for open cuts are not adequate to stop S02 from spoils and spon com. STRONGER pollution controls are needed before any more open cut mines are approved. Better still, keep all mines underground and let the mines pay OH&S for killing their workers. I get no OH&S, yet they are killing me.
1164.	- Agriculture - Economics - Social	Public Partridge	P39	I live and work in the Hunter Valley and would like to make a submission objecting to the above mine proposal. I am disgusted the way the government continues to metre out mining expansion at the expense of our international renowned thoroughbred industry in the Hunter Valley - it is one of three areas in the world that has the topography, soil, landscape to develop an industry of this scale and provide for vertical integration. It simply cannot be picked up and relocated. You impact on one major stud such as Coolmore and Darley at one end of the upper Hunter Valley and the flow on effects will reverberate nationally, investment downstream in the industry will be curtailed, affecting many family businesses and industry participants, particularly at the local level in the Hunter Valley. The

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
				demand for my work will be significantly reduced. Some may say the demise or relocation of Coolmore and I or Darley out of the Hunter Valley will be good for other major industry competitors in Valley, but that is a short cited remark, as the leaders of the industry (including NSW State Government leaders) encourage and support new investors in to the industry and the community recognise the contribution these individual studs make to the community and industry.
1165.	Agriculture	Public Partridge	P39	I rely on the industry for the majority of my livelihood. My expertise is Thoroughbred knowledge and thoroughbred photography which is a skill that takes considerable patience and time to develop and carve out a reputation. This is my lifelong investment in this industry, and a mine is threatening my future....again. Bickham and Dartbrook being the others, there are possibly others I don't know about as yet. I have taken the liberty of enclosing a link to a 1 minute 49 second video that I have produced on the "value" of the Horse Capital brand. While this may appear Scone centric the thoroughbred industry is central to our brand: http://video214.com/playNRbyNAEA1TAWTwp6pfOnog/s/dark This provides a summary against the encroaching engine which the is the coal industry- Anglo's current proposal was submitted after this video was made...how many more mines are coming- Doyles Creek, Bickham, Spur Hill, Dartbrook-the future does not look viable for me to continue my business investments if so.
1166.	- Agriculture - Regulatory and Planning Context	Public Partridge	P39	We require certainty of our current investments and future investments. This ongoing mining -land use conflict benefits no one. The Anglo proposal is another disaster for the community and thoroughbred industry, threatening our investments and future
1167.	- Agriculture - Economics - Social - Tourism	Public Quayle	P40	My reasons for objecting to this proposal are as follows: Impacts on the Wine Industry - The proposed mine will have an effect on key vineyards which will then affect all of our vineyards and damage the reputation of the Upper Hunter Wine Industry as a whole. The survival of our industry needs all these vineyards to continue as a serious wine region not only for our personal reasons but for tourism as well. There are plans for future tourism developments but they are under great threat because of the proposed mine.
1168.	Groundwater	Public Quayle	P40	The Hunter River - The Hunter River is so important to the Viticultural Industry and all agriculture in the

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
	Surface Water			Upper Hunter. Mining is already making an impact on our river water and threatens to further pollute and damage our supply. We worry that the environmental assessments do not give enough attention to this when these decisions are being made.
1169.	Visual	Public Quayle	P40	Visual Impact - The Drayton South mine will be at the gateway to the Upper Hunter wine region and the wine industry does not believe that mining and wine and tourism can co-exist.
1170.	- Air Quality - Human Health	Public Quayle	P40	Air Quality - We are extremely concerned about the dust impact on the health of the community. We strongly believe that an air quality and health impact assessment should be carried out in our area for this and all existing mines.
1171.	- Agriculture - Economics - Social	Public Quayle	P40	Social and Economic - Our area has a lack of affordable housing and skill shortages. Agricultural land has decreased in recent years in price, which is in our view because of continued expansion of mining.
1172.	Agriculture	Public Rodger	P41	I am concerned for local farmers and how this will affect the quality of produce.
1173.	- Agriculture - Social	Public Rodger	P41	Employment as the thoroughbred industry is a major employer in the region.
1174.	Rehabilitation	Public Rodger	P41	Weed management.
1175.	Economics	Public Rodger	P41	Land values and how mining would adversely impact upon them. Value and reputation of the entire Hunter Valley.
1176.	Equine Health	Public Rodger	P41	Welfare and health of horses due to proximity this proposal is to major horse studs.
1177.	Human Health	Public Rodger	P41	The impact this mining proposal will have on immediate and neighbouring industries and community.
1178.	- Agriculture - Rehabilitation	Public Rodger	P41	Lack of evidence that the land can be returned to a viable agricultural use post mining.

No.	Technical Aspect	Stakeholder	Submission Reference	Issue
1179.	Soil and Land Capability	Public Rodger	P41	Adversely affecting soil characteristics.
1180.	Ecology	Public Rodger	P41	General disturbance of natural eco system. Bio security, being a major concern.
1181.	- Groundwater - Surface Water	Public Rodger	P41	Water quality and quantity
1182.	Visual	Public Rodger	P41	How this project will impact visually on the area.
1183.	- Air Quality - Equine Health - Human Health	Public Rodger	P41	Air quality affecting residents and animals
1184.	Non – Aboriginal Heritage	Public Rodger	P41	Impact on Historical buildings in Jerrys Plains
1185.	Traffic and Transport	Public Rodger	P41	Increased traffic concerns
1186.	Visual	Public Wales - Brown	P42	I am writing as a concerned local, currently living abroad, to object to the Drayton South open coal mine project. The region has already been devastated beyond reason with the destruction of topographic landmarks, which not only constitutes ruining the visual amenity of the land, but damages the future capacity of that land for use.