TransGrid

Modifications to Mangoola Coal Mine Plans and Relocation of 500kV Electricity Transmission Line

environmental assessment





xstrata coal
Mangoola Coal

Umwelt
Environmental Consultants

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RESPONSE TO SUBMISSIONS

Environmental Assessment – Modifications to Mangoola Coal Mine Plans and Relocation of 500 kV Electricity Transmission Line Response to Submissions

Prepared by

Umwelt (Australia) Pty Limited

on behalf of

Xstrata Mangoola Pty Limited

and

TransGrid

Project Director:	Barbara Crossley		
Project Manager:	Kate Kelleher		
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Umwelt
Environmental Consultants

2/20 The Boulevarde
PO Box 838
Toronto NSW 2283

Ph: 02 4950 5322
Fax: 02 4950 5737
Email: mail@umwelt.com.au
Website: www.umwelt.com.au

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1.0 Introduction

This document has been prepared in response to a request from the Director-General in accordance with section 75H(6) of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) that Xstrata Mangoola Pty Limited (Mangoola Coal) and TransGrid prepare a response to the issues raised during the public exhibition period of the Environmental Assessment (EA) for the Modifications to Mangoola Coal Mine Plans and Relocation of 500 kilovolt (kV) Electricity Transmission Line (ETL). The EA supported a Part 3A Project Application for relocation of the ETL and an application for modification of Project Approval No. DA 06_0014 for the modifications to Mangoola Coal Mine Plans. The EA was exhibited from 15 December 2010 to 7 February 2011. This report outlines Mangoola Coal's and TransGrid's Response to Submissions and focuses on the issues raised during the public exhibition period. This report has been prepared by Umwelt (Australia) Pty Limited (Umwelt) on behalf of Mangoola Coal and TransGrid and addresses the issues raised by:

- Government Agencies (three submissions):
  - The Department of Environment, Climate Change and Water (DECCW) (now referred to as the Office of Environment and Heritage (OEH));
  - The NSW Office of Water (NOW); and
  - Muswellbrook Shire Council (MSC).
- Special Interest Groups (four submissions):
  - North East Forest Alliance;
  - Green Alliance Network;
  - Wybong Action Group (WAG); and
  - Construction, Forestry, Mining and Energy Union (CFMEU).
- General Public (33 submissions).

Three agency submissions were also received indicating no objection to the Project, i.e. not raising any issues to be addressed as part of this report:

- Department of Industry and Investment (DI&I) now known as the Department of Trade and Investment, Regional Infrastructure and Services (NSW DTIRIS);
- NSW Roads and Traffic Authority (RTA); and
- The Heritage Council of NSW.

Special Interest Groups, the North East Forest Alliance and the Green Alliance Network, raised no specific objection to the proposed ETL relocation. In addition, the CFMEU, submitted a response which supports the proposed modifications to mine plans and ETL relocation.

All submissions which raised issues or concerns were comprehensively reviewed and considered.

The Department of Planning and Infrastructure (DP&I) advised that a total of 43 submissions were received during the EA exhibition period. DP&I advised that 33 submissions were made by the general public during the public exhibition period. Two form letters were received; with the remaining general public submissions were made by individuals. Issues raised relate to the potential impact on the individual and/or issues of concern.

1.1 Report Structure

The report is structured to address the submissions on both the ETL relocation and the Mine Plan Modifications projects separately, effectively creating a standalone report for each project; i.e. **Part A – Electricity Transmission Line Relocation** and **Part B – Mine Plan Modifications**.

Both Part A and Part B will address issues made by government agencies, special interest groups and the general public. In each section, for each issue, the theme of the issue raised is noted in bold, followed by a response in normal type. Where issues are raised that relate to both projects, these are addressed in both parts.

A revised Statement of Commitments has been developed for both the ETL Relocation and the Mine Plan Modifications, addressing the issues raised in the submissions. The changes made to the Statement of Commitments in response to the submissions received are highlighted as tracked changes. **Appendix 1** contains the Revised Statement of Commitments for the ETL Relocation and **Appendix 2** contains the Revised Statement of Commitments for the Mine Plan Modifications.

PART A

Electricity Transmission Line Relocation

PART A – ELECTRICITY TRANSMISSION LINE RELOCATION

2.0 Response to Agency Submissions

2.1 Agencies with No Objections

2.1.1 Department of Industry and Investment

Submission
"Industry & Investment's (I&I NSW) technical officers have reviewed the Environmental Assessment (EA) dated December 2010 for the projects and have no objections".

I&I NSW is now known as NSW DTIRIS. NSW DTIRIS has no specific comment or objections to the ETL relocation.

2.1.2 NSW Roads and Traffic Authority

Submission
"RTA has reviewed the information provided and has no objections for the proposed relocation of the electricity transmission line and modification to mine plans for the Mangoola Coal Project provided the following matters are addressed and included in the Minister's conditions of approval:

- **All heavy vehicles associated with the construction of the subject project shall access the site via the intersection of Denman Road and Bengalla Link Road. Light vehicles shall use the intersections of either Denman Road and Bengalla Link Road or the Golden Highway and Wybong Road;**
- **A Construction Traffic Management Plan shall be prepared and submitted to the RTA and Council for approval, prior to any construction proceeding on site. The CTMP shall include, as a minimum, the following:**
  - **Measures to minimise identified impacts on school buses and local residents by vehicle movements;**
  - ***Comment: The RTA would support the prohibition of heavy vehicles to and from the site during school time. This should be discussed further with Council and the relevant bus companies; and***
  - **Measures to minimise identified impacts caused by local road closures".**

Response
A commitment to a Construction Traffic Management Plan addressing the issues raised by the RTA, including the exclusion of construction heavy vehicles deliveries to site during school bus service hours, has been included in the Revised Statement of Commitments for the ETL Relocation provided in **Appendix 1**.

2.1.3 Heritage Council of NSW

Submission
The Umwelt report includes recommendations that:

1. **in the unlikely event significant historical archaeological remains are found, all works should stop and the Heritage Branch should be notified; and**

2. **the identified sites (windmill and fence) should be included in relevant Construction Environmental Management Plans.**

The Heritage Branch supports these recommendations.

"On this basis there are no heritage objections to the proposed modification of the Mangoola Coal Mine."

Response
The abovementioned recommendations are included in the Revised Statement of Commitments for the ETL Relocation.

2.1.4 NSW Office of Water

The submission from the NSW Office of Water (NOW) relates to the proposed mine plan modifications. NOW has no specific comment or objection in relation to the ETL relocation.

2.2 Department of Environment, Climate Change and Water

2.2.1 Biodiversity Offsets/Vegetation Clearing

Submission
Where the ETL easement passes through Biodiversity Offset Areas all groundcover and shrubs must be retained, and any trees that do pose a demonstrable safety risk must be pruned to the minimum extent necessary.

Response
Measures included as part of the project that will ensure minimal impact to vegetation lying below the proposed ETL relocation include:

- **Tower relocation to span Big Flat Creek Conservation Area** – due to the sensitivity of this area, the towers on either side were relocated outside of the riparian vegetation (and outside the Conservation Area), to avoid the need to clear riparian vegetation for their construction. This has avoided potential impacts within this Endangered Ecological Community (EEC) vegetation for the construction of towers. To further avoid impact, the stringing process for the cables was altered to adopt an aerial approach to avoid the need for heavy vehicles to enter and therefore directly impact this EEC. The draw wire used during the stringing process will be walked through the existing Big Flat Creek Conservation Area to further minimise impact.

- **Easement maintenance** – rather than clearing all of the vegetation within the easement for safety reasons, this project has adopted an approach for sensitive areas (i.e. Biodiversity Offset Areas or Threatened Ecological Communities (TECs)) that will selectively remove or lop trees with a mature height of over 4 metres that are deemed to pose a safety risk for the ETL. This will ensure that vegetation removal for this purpose is

as minimal as possible, whilst not compromising the safety and reliability of the ETL. The retention of trees up to 4 metres high, shrub and ground vegetation within the easement will reduce impacts from fragmentation, by providing vegetated cover for dispersing fauna species.

These commitments from the proposed project will ensure minimal impact to the shrub and ground layers beneath the ETL, thus reducing the total amount of vegetation to be impacted, avoiding the requirement to remove threatened species such as *Acacia pendula* (if recorded from these areas), and reducing habitat loss and fragmentation for fauna species.

2.2.2 Hollow Bearing Trees

Submission

Any tree hollows lost by felling hollow bearing trees (including stags) and hollow fallen timber must be reinstalled or replaced by nest boxes set in appropriate locations at appropriate heights for the target fauna species.

Response

The project has been designed and revised to avoid impacts to ecological values where possible. The ETL relocation is likely to require the removal of hollow-bearing trees where they occur at the proposed tower locations, and in parts along the easement. A total of 22 hollow-bearing trees were recorded during surveys of the Assessment Areas (refer Ecological Assessment, Appendix B1 of the EA), either in the easement, or nearby. It is possible that some of these trees may be able to be retained within the easement, where access tracks may be able to be moved to avoid them; however, this will be determined on a case-by-case basis, depending on the location, size and value of each tree.

Where hollows are lost as a result of the ETL relocation they will be managed in accordance with the existing Rehabilitation and Offset Management Plan (ROMP) for the Mangoola Coal Mine (Umwelt 2011c).

As part of the ROMP a detailed pre-clearing survey and tree felling procedure has been designed to minimise the impact on native species (both threatened and non-threatened), as well as significant habitat features. The pre-clearing surveys and tree felling procedures aim to identify significant ecological features within areas to be cleared and aim to make all reasonable attempts to minimise the impact of the clearing. Significant ecological features may include:

- hollow-bearing trees;
- fallen timber; and
- hollow logs and stumps.

The ROMP also includes measures for habitat augmentation during rehabilitation of the post-mining disturbance area, where hollows lost during the clearing process will be replaced at a 1:1 basis. This will occur either as soon as the rehabilitation within post-mining areas is of a suitable age to support nest boxes and salvaged hollows, or on poles within areas of younger vegetation to provide nesting/denning habitat for key threatened species.

While all of the tree hollows lost from the approved disturbance areas will be replaced, this will be a gradual process governed by the staging of the clearing itself, as well as the staging of the rehabilitation of the post-mining areas. In some cases, there will be an unavoidable delay in replacing hollows (like for like), resulting in a short-term loss of hollows to the Ecological Assessment Study Area. This issue will be offset (somewhat), by the installation

of nest boxes within the Biodiversity Offset Areas and proposed Corridors, where this resource is deemed lacking. This is currently occurring on the Mangoola Coal Mine.

Nest boxes will be installed in the Biodiversity Offset Areas and proposed Corridors to ameliorate the short-term loss of hollow-bearing trees from approved disturbance areas. The aim is to provide compensatory habitat for hollow-dependent fauna species (both threatened and non-threatened) and to achieve the Ecological Assessment (Appendix B1 of the EA) commitment of no net loss of hollows within the Study Area. This is intended to increase the existing carrying capacity of the vegetation in these areas and to allow for some additional habitat for displaced fauna.

The installation of suitably capped and treated hollows salvaged from felled vegetation will contribute towards achieving the 1:1 replacement of hollows cleared within the mine. This will also ensure maximum use of felled resources within the site and improve ecological outcomes.

The ROMP for Mangoola Coal Mine provides further details on procedures. The relevant procedures will be adopted for the ETL Construction Environmental Management Plan (ETL CEMP) (as required by the Statement of Commitments in the EA (refer Section 9.2.2.1 of the EA)).

2.2.3 Vegetation Clearing

Submission

Prior to any vegetation clearing in any of the proposed modification areas and the new route proposed for the electricity transmission line, a survey for *Acacia pendula* plants must be done. In the event that any plants are found they are to be marked and protected from harm during any subsequent earthwork and construction work around them.

Response

The Ecological Assessment completed as part of the EA for the ETL relocation (refer Appendix B1 of the EA) included the assessment of Endangered Populations. Three endangered populations were recorded in the vicinity of the Assessment Areas, including weeping myall (*Acacia pendula*). One stand of weeping myall (*Acacia pendula*) occurs to the immediate west of Assessment Area B, extending from Big Flat Creek to Wybong Road. This stand of *Acacia pendula* comprises the endangered population and the listed EEC. This stand will not be disturbed for the project. Another stand of *Acacia pendula* occurs approximately 1 kilometre north of Assessment Area A and similarly will not be disturbed for the project.

Despite the absence of the endangered population in the project area, this recommendation is addressed in the ROMP for the Mangoola Coal Mine (Umwelt, 2011c).

The ROMP contains detailed requirements for the completion of pre-clearing surveys designed to minimise the impact of clearing activities on native species (both threatened and non-threatened). The detailed pre-clearing procedures and forms are designed to record all significant ecological features including (but not limited to) threatened flora species; TECs; threatened fauna species (or signs thereof); signs of fauna breeding; seed sources; and significant habitat features (such as hollow-bearing trees, fallen timber and boulders) to be salvaged for later use. This procedure will be implemented in all works required for the proposed modifications, and this will ensure that any threatened flora species (including *Acacia pendula*) will be appropriately surveyed for, prior to clearing.

If threatened flora species are recorded within the proposed ETL easement, it may be possible to retain these and protect them from impact by fencing and monitoring them. Such a case may be possible if, for example, *Acacia pendula* is recorded beneath the ETL. Smaller shrubs and low vegetation is able to be maintained underneath these areas, and, in such case, plants could be clearly marked, fenced and monitored to ensure their persistence beneath the ETL. Where such retention of threatened flora species is not possible (such as within the proposed modification areas) opportunities to salvage, transplant and/or propagate these species (as per the ROMP and current Project Approval condition for the Mine) will be investigated. Such salvage and translocation of threatened flora species (primarily *Diuris tricolor*, *Prasophyllum* sp. Wybong (C. Phelps ORG 5269) Wybong and *Acacia pendula*) is already occurring where practicable as part of the implementation of the ROMP on the Mangoola Coal Mine with 176 *Diuris tricolour* and 200 *Prasophyllum* sp. Wybong being translocated within their flowering window in 2010[1]. Translocation success will be monitored in spring 2011. Translocation was carried out in accordance with a strategy specifically developed for the translocation of orchids at the Mangoola Coal Mine site; 'A strategy for the translocation of threatened terrestrial orchids at Mangoola Coal, Upper Hunter Valley' (Eastcoast Flora Survey, 30 September 2010). Records of translocations are maintained on site. An individual *Acacia pendula* plant was also removed and sent to the NSW Forestry Nursery in Muswellbrook; however, it did not survive. An ongoing program of translocation works is currently being developed and will provide for regular review to optimise the program in consideration of improvement opportunities identified as translocation progresses.

The Mangoola Coal Mine ROMP (Umwelt, 2011c) provides further details on this issue and relevant procedures will be adopted in the ETL CEMP.

Submission

A biodiversity offset area for the proposed modification must be provided as outlined in Appendix B1 Table 6.2 and Appendix C1 and Table 6.2 of the Environmental Assessment. These offset areas must meet all of DECCW's Biodiversity offsetting principles as specified in the DECCW 2009, (Appendix 1) Lower Hunter Regional Conservation Plan, Department of Environment Climate Change and Water NSW Plan or satisfy the requirements of DECCW's BioBanking scheme as specified in BioBanking Assessment Methodology and Credit Calculator Operational manual (DECCW, 2008). To qualify for a BioBanking Statement a proposal must meet, improve or maintain standard.

Response

A Biodiversity Offset Area for the proposed modification has been included as part of the proposed project. Mangoola Coal recognises the value in implementing OEH's 13 principles for biodiversity offsetting and has provided a detailed comparison of the performance of the impact mitigation and biodiversity offsetting measures proposed as part of the project against these principles within the Ecological Assessment completed as part of the EA for the proposed ETL relocation (refer Section 6.4 of Appendix B1 of the EA).

BioBanking will not be conducted as part of the project. It should also be noted that the OEH BioBanking Scheme is voluntary (DECCW, 2010).

[1] It should be noted that the team from the University of Newcastle Centre for Sustainable Ecosystem Restoration have also commenced a seed harvesting trial for *Diuris tricolor* and three *Prasophyllum* sp. Wybong as part of a research and development program for the Investigation of Soil and Plant Regeneration Methods at Mangoola, in collaboration with Mangoola Coal.

Submission

The proponent must translocate *Diuris tricolor* plants from the area to be cleared to the new offset areas in accordance with the Australian Network for Plant Conservation 'Guidelines for the Translocation of Threatened Plants in Australia; Second Edition' by L. Vallee, T. Hogbin, L. Monks, B, Makinson, M. Matthes and M. Rossetto (2004) or must provide additional management for conservation and enhanced protection of the land with nominated population(s) to that required by the 2007 consent.

Response

There were 122 individuals of tricolour diuris (*Diuris tricolor*) species recorded within Proposed Modification Area 1, although only three individuals will be impacted as a result of the project due to the redesigning of this area to avoid this substantial population.

Translocation of *Diuris tricolor* from the approved disturbance area into suitable known habitats within the Biodiversity Offset Areas is already occurring (where practicable), as per the Project Approval for the Mangoola Coal Mine, and defined further in the ROMP (Umwelt 2011c) (refer previous response for further details). This will be extended to include any records of this species identified (during seasonal surveys) in the proposed modification areas. Translocation was carried out in accordance with a strategy specifically developed for the translocation of orchids at the Mangoola Coal Mine site; (Eastcoast Flora Survey, 2010).

Umwelt does, however recommend that salvaged orchids are not translocated into the Additional Biodiversity Area, as detailed seasonal surveys of this area (by Stephen Bell (Umwelt)) failed to locate any records of this species in that property. Indeed, he identified it as lacking habitat for this species, based on the type of grasslands present in that area. Rather, it is recommended that this proposed condition of approval be revised to require these orchids to be translocated into suitable known habitats within the Biodiversity Offset Areas, as is currently occurring.

Translocation procedures comply with the relevant components of the guidelines in the text referenced above.

Submission

The proponent has not stated how the offset areas will be secured in perpetuity but instead notes in the draft 'Statement of Commitments' (Commitment 6.8.2) that the offset areas must be secured for conservation in perpetuity by one or more types of mechanism.

Response

The new Additional Biodiversity Offset Area will be secured for long-term conservation, as will the Biodiversity Offset Areas and Corridors. The mechanism for securing these areas in the long-term continues to be investigated, and discussions with DP&I and OEH in relation to the preferred mechanism are ongoing.

2.2.4 Aboriginal Archaeology

Submission

The applicant must continue to consult with and involve all the registered local Aboriginal representatives 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.

Response

Mangoola Coal currently consults with the Registered Aboriginal Parties in accordance with relevant consultation requirements and the approved Anvil Hill Coal Mine Aboriginal Cultural Heritage Management Plan (Umwelt, 2008) (known as the Mangoola Coal ACHMP), and will continue to do so to ensure the appropriate ongoing management of Aboriginal cultural heritage values.

Mangoola Coal maintains a detailed stakeholder consultation log which is available for review by OEH and DP&I upon request.

Submission

The proponent shall implement an Aboriginal Cultural Heritage Management Plan (ACHMP) for the project area. The ACHMP is to be implemented in consultation with the registered local Aboriginal stakeholders. The plan must include procedures for ongoing Aboriginal consultation and involvement, details of the responsibilities for all stakeholders, management of any recorded sites within the project area, surface collection and monitoring procedures, procedures for the identification and management of previously unrecorded sites (excluding human remains), identification and management of an proposed culturally appropriate offset/conservation area(s), and details of an appropriate keeping place agreement with local Aboriginal community representative for any Aboriginal objects salvaged through the development process, details of proposed mitigation and management strategies for sites identified to be impacted within the project area and compliance procedures in the unlikely event that non-compliance with ACHMP is identified.

Response

Mangoola Coal operates in accordance with an approved ACHMP for the currently approved Mangoola Coal Mine. The ACHMP is due to be revised within the next 12 months. The revisions to the Mangoola Coal ACHMP will include additional information on all newly identified sites on land owned or managed by Mangoola Coal, including the sites identified within the areas affected by the Modifications to the Mangoola Mine Plan and the ETL relocation. Should the current modifications be approved, the revisions to the ACHMP will also address the matters outlined above, where they relate to sites and offsets within the Mangoola Coal approved area.

An ETL CEMP will be developed for the relocation of the ETL and will include reference to relevant sections within the Mangoola Coal ACHMP. This plan will address the matters outlined above, where they relate to sites within the area affected by the ETL relocation. TransGrid have established environmental control procedures for minimising impacts during maintenance of transmission lines, easements and access tracks which will also be incorporated as part of the ETL CEMP process.

Submission

In the event that surface disturbance indentifies a new Aboriginal site, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeologist and representatives of the local Aboriginal community must be contacted to determine the significance (cultural and scientific) of the object(s). The site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) (managed by DECCW) and the management outcome for the site included in the information provided to the AHIMS. The proponent will consult with the Aboriginal community representatives the archaeologist and DECCW to develop and implement management strategies for all objects/sites.

Response
The Mangoola Coal ACHMP currently includes a procedure for management of previously unrecorded sites and this procedure will be updated during revision of the ACHMP to reflect the requirements outlined above. These requirements will also be addressed in TransGrid's ETL CEMP.

Submission
The proponent is to provide fair and reasonable opportunities for the registered local Aboriginal stakeholders to monitor any initial ground disturbance works associated with the areas immediately adjacent to any Aboriginal site/object proposed to be salvaged within the project area. In the event that additional Aboriginal objects are uncovered during the monitoring program, the objects are to be recorded and managed in accordance with the requirements of sections 85A and 80A of the *National Parks and Wildlife Act 1974*, as *amended*.

Response
Surface collection and analysis of objects from sites subject to harm as a result of the 500kV ETL relocation (SC60, SC61, SC62, SC63, SC64, SC65 and SC66) will be conducted in accordance with the methodology approved by the relevant Aboriginal stakeholders and OEH as part of the Mangoola Coal ACHMP (Umwelt, 2008).

The provision of opportunity to monitor initial ground disturbance works associated with these sites is not justifiable on archaeological grounds. As discussed in Section 7.4 of Appendix B2 of the EA, the sites that are subject to salvage are all located in an environmental context within which there is a low likelihood of subsurface deposits that are extensive in either artefact numbers or areal extent. It follows that there is also a low likelihood that monitoring will result in the identification and additional salvage of artefacts in sufficient quantities to justify this activity. In addition, the majority of sites subject to salvage (SC60, SC61, SC62, SC63, SC64, SC65 and SC66) are located on an existing vehicle access track that will not be subject to significant ground disturbance works other than an increase in vehicle movements (i.e. no additional mechanical disturbance to this area). As such, it is not feasible for registered local Aboriginal parties to monitor initial ground disturbance works at these sites.

It is also noted that the Mangoola Coal ACHMP provides procedures for unexpected finds and that all employees and contractors will receive an induction to make them aware of these procedures. The TransGrid ETL CEMP will also include these procedures.

Submission
If human remains are located following any surface disturbance, 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 police provide written notification to the proponent. If the skeletal remains are identified as Aboriginal, the proponent must contact DECCW's Enviroline on 131 555 and representative of the local Aboriginal community. No works are to continue until DECCW provide written notification to the proponent.

Response
This recommendation has been addressed in the management recommendations of the Aboriginal Heritage Assessment for the Proposed Relocation of the ETL; Appendix B2 of the EA. It will be retained in the revision to the Mangoola Coal ACHMP and incorporated into the TransGrid ETL CEMP for the project.

Submission

All reasonable efforts must be made to avoid impacts to Aboriginal cultural heritage at all stages of the development works. If impacts are unavoidable, mitigation measures are to be negotiated with the local Aboriginal community and DECCW. All sites impacted must have a DECCW Aboriginal Site Impact Recording (ASIR) form completed and submitted to DECCW AHIMS unit within 3 months of completion of these works.

Response

As discussed in Appendix B2 of the EA, impacts to Aboriginal cultural heritage have been avoided where possible. Appendix B2 evaluated the possible management options for unavoidable impacts and provided detailed management recommendations and methodologies (refer to Sections 11, 12 and 13 respectively). These documents were developed in consultation with the Registered Aboriginal Parties. Following approval, the relevant mitigation measures will be incorporated into the revisions to the Mangoola Coal ACHMP and the TransGrid ETL CEMP. The requirement for submission of Aboriginal Site Impact Recording (ASIR) cards following salvage will also be incorporated into these documents.

Submission

An Aboriginal Cultural Education 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 local Aboriginal community.

Response

An Aboriginal Cultural Education Program has been developed for the Mangoola Coal Mine and is implemented as part of the induction process for all employees and contractors. It is mandatory to complete an induction prior to commencing work activities at the site, including construction.

The program is in the format of a DVD and associated questionnaire for full time employees and contractors. Development of the program commenced in 2009 in collaboration with Registered Aboriginal Parties through the 6 monthly consultation meeting process, with feedback forms collected on who wished to be interviewed. Further consultation was conducted with interview participants, including the finalisation of interview questions. The DVD was produced in June 2010, with copies also being circulated to participants. The program is actively implemented on site.

All induction records are maintained both on site in the Mangoola Coal Management System and by the contractor who conduct the inductions.

This program will be available for induction processes for the ETL relocation.

Submission

Long-term care of recovered Aboriginal objects

The proponent must ensure that if Aboriginal objects are to be salvaged or uncovered due to development activities any custodial arrangements proposed must comply with the provision of section 85A of the NPW Act. In addition, the proponent must provide evidence of the support or otherwise, from all registered Aboriginal stakeholders, of any decisions regarding short term and/or final custodial arrangements.

Response

The proposed revision to the Mangoola Coal ACHMP and the TransGrid ETL CEMP to be developed will include this recommendation and any proposed custodial arrangements will need to comply with Section 85 of the *National Parks and Wildlife Act 1974* (NPW Act). It should be noted that during the development of these documents every opportunity will be afforded to Registered Aboriginal Parties to provide input into decisions regarding short and long-term and/or final custodial arrangements for salvaged artefacts. However, it cannot be guaranteed that all will want to provide input.

Submission

Culturally appropriate offset area

DECCW acknowledges that the proponent has committed to developing a culturally appropriate offset area to alleviate the associated impacts on Aboriginal cultural heritage by the project application. However, we note that this process is yet to be finalised. DECCW strongly recommends that prior to the determination of the major project application, the proponent is required to provide details pertaining to a final decision regarding this matter. It is also strongly recommended that any final decision is supported with evidence from the registered local Aboriginal stakeholders.

Response

As identified in the EA further consultation was undertaken with Registered Aboriginal Parties as part of the 6 monthly consultation meeting process in an effort to determine culturally appropriate offsets. At the most recent meeting (3 March 2011), an identified potential offset area was presented to the Registered Aboriginal Parties, the majority of whom indicated that they wish to inspect the area to consider its Aboriginal cultural values. This inspection will be arranged as part of upcoming cultural heritage work at Mangoola Coal Mine and the outcomes reported to DP&I and OEH.

An alternative offset package related to employment and training was also suggested by some representatives. It was determined that the nature of the offset would be finalised following inspection of the proposed offset area and additional consultation between Mangoola Coal, TransGrid and the Registered Aboriginal Parties.

Both Xstrata Coal NSW and Mangoola Coal are already in the process of developing programs with a focus on indigenous training and employment. Should the offset package suggested in relation to employment and training be a viable option, it would be in line with existing programs.

Xstrata Coal NSW is in the process of developing a Reconciliation Action Plan (RAP) to initially be rolled out in the Hunter Region, following which it would be rolled out state-wide. Projects and strategies in the RAP include:

- establishment of baseline Aboriginal employment information across the business and systems for monitoring Aboriginal employment;
- identification and evaluation of Aboriginal traineeship and employment opportunities;
- collaboration with Aboriginal communities, labour hire companies, and relevant agencies (Department of Aboriginal Affairs, Aboriginal Education Services, etc) to establish requirements for recruitment, mentoring and support; and
- increasing cultural awareness and support mechanisms within the business to ensure the success of training and employment strategies.

In addition to the RAP, Mangoola Coal is in the process of further developing an indigenous training plan. In conjunction with local labour hire and indigenous representatives Mangoola Coal will promote training of local unskilled/semi skilled indigenous people in roles that will assist them to gain mining related skills and experience; for example, driving light earth moving equipment such as bobcats, diggers and articulated trucks. This experience would make them competitive applicants for future operator positions at Mangoola Coal Mine and other regional mining operations.

It should be noted that the activities associated with the ETL relocation are of limited duration and therefore provide limited opportunity for long term regional employment. The new ETL is primarily a static asset and replaces a section of an existing ETL, the maintenance for which will not generate additional employment and training opportunities.

Submission

Recent amendments to the NPW Act

The requirements of the NPW Act have recently been amended and the proponent should familiarise itself with the new requirements during the development and any subsequent assessment/development works processes.

Response

The relevant amendments to the NPW Act will be addressed in the revisions to the Mangoola Coal ACHMP and in the development of the TransGrid ETL CEMP.

Submission

Aboriginal Cultural Heritage Management Plan

DECCW acknowledges that the proponent is committed to managing the Aboriginal heritage within the project area in accordance with the existing Xstrata's ACHMP. DECCW supports this proposal and recommend that the existing ACHMP is amended to incorporate the additional details of the identified Aboriginal heritage, associated management strategies and community involvement within the additional project area subject to the modification as well as the ETL relocation areas. DECCW also recommends that these details are incorporated into any Construction Environmental Management Plans. Further, evidence of consultation and any community support, comment or otherwise for an amended ACHMP, should be appended to the ACHMP in its final iteration.

Response

The revisions to the Mangoola Coal ACHMP will include additional information on all newly identified sites on land owned or managed by Mangoola Coal, including the sites identified within the areas affected by the proposed modifications to mine plans. Should the proposed modifications be approved, the revisions to the ACHMP will also address the matters outlined above, where they relate to sites and offsets within the Mangoola Coal Mine approval area.

Similarly, an ETL CEMP for the project will address the matters outlined above, including consultation details.

Submission

TransGrid policy/procedures for managing cultural heritage to be provided to DECCW to ensure they meet with the requirements of the current DECCW guidelines, requirements and recent amendments to the *National Parks and Wildlife (NPW) Act 1974*.

Response
TransGrid policy/procedures for managing cultural heritage will be provided to OEH as requested to ensure awareness and/or compliance with current OEH guidelines and requirements and recent amendments to the NPW Act. As noted above, an ETL CEMP will be developed for this project, and where there are archaeological sites within the area affected by the ETL relocation, it is considered most appropriate that the current policy/procedures are provided to OEH as part of the ETL CEMP at that time.

2.3 Muswellbrook Shire Council

2.3.1 Vegetation Corridors

Submission
54. The following is noted:

(a) The mine is positioned in a critical part of the Shire's environmental (woodland connectivity and remnant woodland) corridor. Particularly, the mine will disturb land of significant ecological value and unquestionably some of the most intact local habitats outside of the Shire's national parks and state reserves;

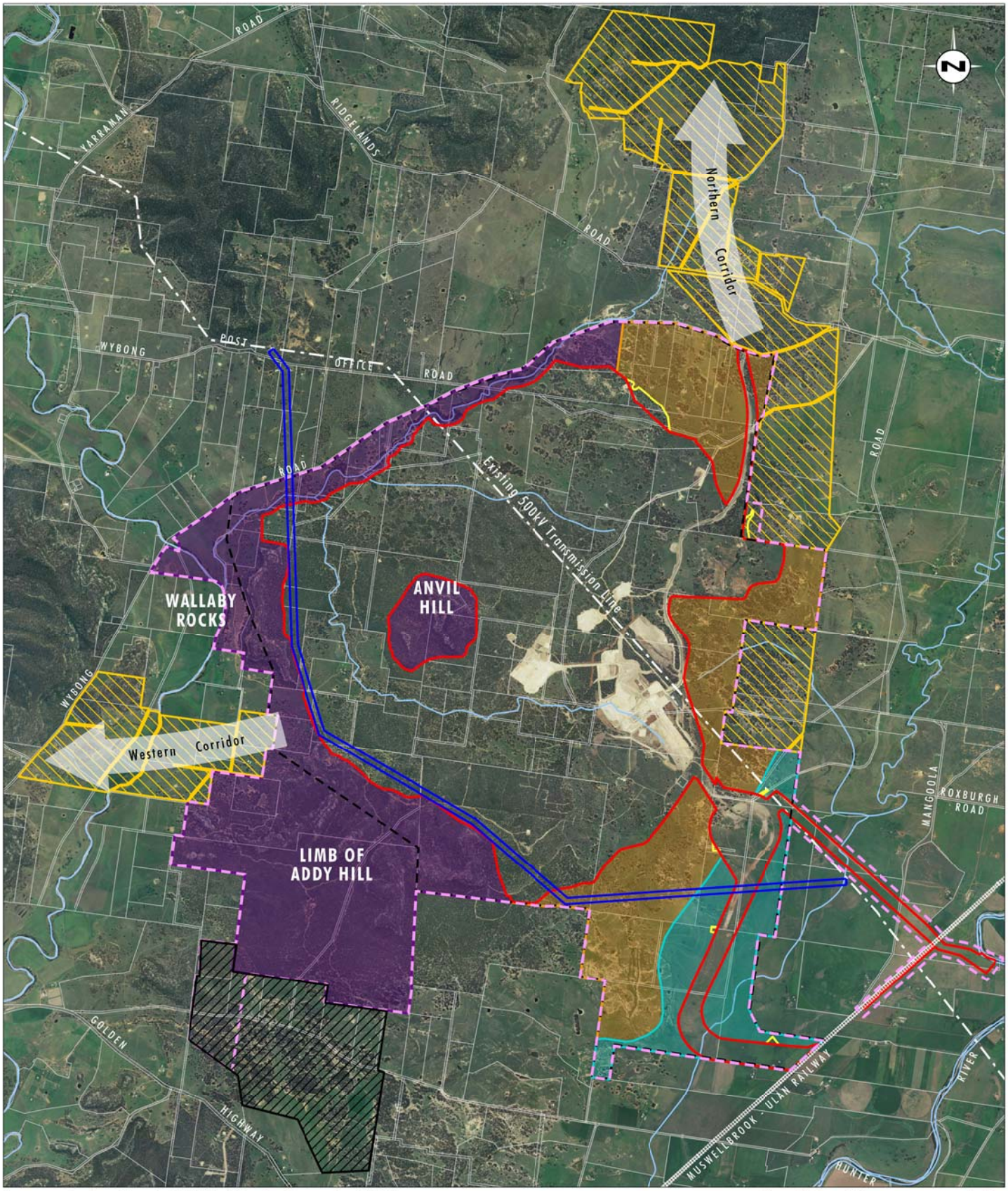
(b) The Proponent seeks to remove a significant residual north south corridor (the existing ETL easement) as part of its Application;

Response
(a) It is important to note that the Mangoola Coal Mine has been approved and is under construction, which is substantially complete, and that the combination of the ETL relocation and mine plan modifications involves relatively minor additional clearance of vegetation (i.e. a total of 26.6 hectares of vegetation communities) which will be offset by establishment of an additional 64 hectares of Biodiversity Offset Area, building on the extensive Biodiversity Offset Areas established as part of the existing project approval.

(b) The purpose of this comment is unclear. The existing ETL easement was assessed as part of the project disturbance area for the current Mangoola Coal Mine approval. In addition, two corridors are to be retained and/or enhanced with the aim of improved habitat connectivity and protection (refer **Figure 2.1**).

2.3.2 Critically Endangered Species

Submission
54.
(c) The critically endangered *Prasophilum Wybong* (the only known location is on the Proponent's mining lease) has a population, amongst other locations, on the existing ETL easement and the disturbance of that easement or the relocation of the ETL would necessitate a Federal referral – it is not clear whether that referral has been undertaken or whether the Proponent is aware of the location of the *Prasophilum Wybong* (although Council has previously advised the Proponent of that matter).



Source: Dept. of Lands (2003), Xstrata Mangoola (2010)

0 0.5 1.0 2.5km

Legend

- Approved Project Disturbance Boundary
- Mining Lease 1626 Boundary
- Modified Project Disturbance Boundary
- Project Boundary
- Habitat Enhancement Offset Area
- Sustainable Agriculture Offset Area
- Conservation Offset Area
- Refined Proposed Corridor (12/03/2010)
- Former Nipol Property
- Proposed 500kV ETL Relocation

FIGURE 2.1

Biodiversity Offsets and Vegetation Corridors

File Name (A4): R20_SecA_V1/2497_360.dgn

Response

Prasophyllum sp. Wybong (C. Phelps ORG 5269) was not recorded within the proposed modification areas or the disturbance areas for the ETL relocation, despite surveys being completed within the suitable flowering season and when nearby records were known to be flowering. Despite this, the Ecological Assessment completed for the EA (Appendix B1 of the EA) acknowledged the potential habitat for this species present in these proposed disturbance areas (as a result of the proximity of other records in similar habitats), and assessed the potential impacts on this species accordingly.

An EPBC referral was made for the Anvil Hill Project to the Commonwealth Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) in 2007 (2007/3228); submitted and assessed prior to the listing of the *Prasophyllum sp*. Wybong species (C. Phelps ORG 5269) (effective listing date of 13/11/2009[2]; conservation advice approved by Minister on 20 October 2009). This referral assessed the Proposed Disturbance Area which represents the proposed footprint for the Project. It noted that all land within this boundary (2238 hectares, including the existing ETL easement) may be directly impacted or disturbed in some way due to activities associated with the operations, such as mining, infrastructure or construction, at some time during the 21 year approval period. Notification stated that the referred project is 'not a controlled action'.

An EPBC Referral for the proposed mine plan modifications and ETL relocation was made by Xstrata Mangoola Pty Limited and TransGrid to the DSEWPC on 4 August 2010 (2010/5607). The referral included reference to, and assessment of, the occurrence of *Prasophyllum* sp. Wybong (C. Phelps ORG 5269). This referral did not include the approved project area as it had previously been deemed to 'not be a controlled action'. The areas assessed include those outside the approved disturbance area, that had previously been deemed not a controlled action, and as such the referral related to:

- ETL relocation easement to north (1.9 kilometres) and south (3.4 kilometres) located outside the approved disturbance area, and associated access tracks; and
- Increases to the approved project disturbance boundary of the Mangoola Coal Mine for the purposes of:
  - mining the coal resource (8.4 hectares to the north-east of the approved disturbance area);
  - a raw water dam which will inundate land at full supply (1.7 hectares to the east of the approved disturbance area); and
  - four small areas with a total area of 1.6 hectares (to the south-east of the approved disturbance area) where rail loop drainage designs have a minor effect on the overall footprint of the rail loop.

The referral states 'The proposed action will not impact upon any known records of the leek orchid (*Prasophyllum* sp. Wybong (C. Phelps ORG 5269)) (Critically Endangered). This species has been recorded within the approved project disturbance area, and has the potential to occur within the habitats of the ETL Assessment Areas and Proposed Modification Areas. Surveys completed during its flowering period (coinciding with that of tricolour diuris (*Diuris tricolor*)) have not identified the presence of this species within the ETL Assessment Areas or Proposed Modification Areas'.

The DSEWPC provided notification on 20 September 2010 that the referred project is 'not a controlled action'.

[2] As per DSEWPC website.

2.3.3 Offsets

Submission

54.

(d) The offset strategy proposes the sterilisation of land to the south of the project historically held for grazing;

Response

As part of the project approval for the Mangoola Coal Mine, a Sustainable Agriculture Offset Area has been established to the south-east of the existing mine. This Sustainable Agriculture Offset Area was proposed in order to achieve both biodiversity and agricultural outcomes, in character with many surrounding land uses and in recognition of its higher land capability. This covers an area of approximately 217 hectares, and will be managed for mixed uses, including grazing and other sustainable agricultural practices as appropriate for the area under strict management and documentation. Biodiversity outcomes for this area will be achieved via the establishment of approximately 45 hectares of treed vegetation over the long term through revegetation and natural regeneration. Such tree establishment will be in the form of tree lots (of targeted species composition) which will allow sustainable grazing in these areas, once trees are of sufficient age.

The Additional Biodiversity Offset Area has been provided as part of this proposed project, in order to address residual impacts of the project on threatened species, endangered populations, TECs and their habitats. As a result, it is necessary to exclude and/or to manage grazing in this area in order to maintain and protect its current ecological value as well as to allow future habitat augmentation and revegetation works, if required. This will involve a total area of 64 hectares (34 hectares for the mine plan modifications and 30 hectares for the ETL relocation).

Submission

(e) 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.

Response

In relation to this matter, the following is important to note:

- The land-based offsetting of ecological impact is a requirement of OEH and DP&I, and as per the *Principles for the Use of Biodiversity Offsets in NSW* (DECCW, 2008);

- All of the land proposed for offsetting for the Mangoola Coal Mine as part of the proposed modifications, is on Mangoola Coal owned[3] land within the Muswellbrook Local Government Area (LGA);

[3] Xstrata Mangoola Pty Limited

- The Biodiversity Offset Areas and Corridors contain known large populations of 'Muswellbrook's native orchids which are apparent for only short periods each year'. Surveys within the approved project disturbance area are conducted on an annual basis during the flowering periods of *Diuris tricolor* and *Prasophyllum* sp. Wybong (C. Phelps ORG 5269) for the purpose of documenting the number of plants to be disturbed (to Inform the offset strategy), and for translocation purposes. To date, considerable numbers of *Diuris tricolor* have been translocated from the approved project disturbance area into comparable habitat within the secure Biodiversity Offset Areas (refer **Section 2.2.3** of this Response to Submissions Report for further details). Impact assessments or due diligence assessments for all works with the potential to impact on terrestrial orchids or their habitats, have ecological surveys carried out during their flowering periods; and

- The ROMP for the Mangoola Coal Mine provides detailed information relating to the protection and management of known orchid habitat within the secured Biodiversity Offset Areas and Corridors, as well as potential habitat for these species.

Submission

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 enhancement areas and the undisturbed habitats.

Response

The Draft ROMP was submitted to DP&I for review and comment prior to mining on 17 August 2010. Following provision of comments from the relevant authorities, the ROMP was revised and re-issued as Final on 21 December 2010. An additional revision was submitted on 7 April 2011. Further planning and refinement of forward actions to achieve critical commitments from the ROMP (Umwelt, 2011b) (such as revegetation and regeneration works within the Biodiversity Offset Areas and Corridors) are ongoing, in consultation with the relevant authorities, as required.

The Landscape Management Plan[4] was submitted to NSW DTIRIS and the Director General of DP&I with final approval required by the Director General. The relevant project approval conditions do not require liaison with Council regarding these plans.

[4] The ROMP forms part of the Landscape Management Plan.

3.0 Response to Special Interest Groups

3.1 Special Interest Groups with No Objections

3.1.1 Construction, Forestry, Mining and Energy Union

Submission

The Union is familiar with the Mangoola site and engaged the services of an Environmental Consultant with extensive experience in local government and environmental assessments on coal mining related projects.

The Environmental Assessment has found that there will be some minor impacts associated with the construction of the relocated ETL, but once operational, there will be minimal net change in the extent of environmental impacts associated with the relocated ETL, as it will be replacing an existing section. Considerable effort has been directed by the Proponent into the design of the ETL to minimise environmental impacts as far as possible.

The proposed modifications to the mine plan include a number of elements which are specifically designed to improve the environmental performance of the project. The modification to the mine plan does not seek to increase production rate as a result of the alterations to the mine plan or to alter the original consent period.

The proposed relocation of the 500 kV ETL and modification to mine plan, to the extent feasible, has been designed to address key issues of concern to the community. An evaluation of the proposed modifications has been undertaken by comparing environmental risks against the currently approved project, in conjunction with the Proponents commitment for controls, safeguards or mitigation measures.

Based on comparative analysis of the key elements detailed in the Mangoola Coal Mine Statement of Environmental Effects, it is considered the Modification 4 Project to build on the attributes of existing project approval.

After reviewing all the material and taking advice, the Union supports on balance the Mangoola Mine Modification 4 Project.

3.1.2 North East Forest Alliance/Green Alliance Network (formerly associated with North East Forest Alliance)

Submissions from the North East Forest Alliance and the Green Alliance Network relate to the proposed mine plan modifications. The North East Forest Alliance and the Green Alliance Network have raised no specific comment or objection in relation to the proposed ETL relocation.

3.2 Wybong Action Group (WAG)

Submission

Council is unable to upgrade and maintain the road network impacted upon by the modified project to contemporary, safe and appropriate Austroads standards and has no reasonable prospect of ever being able to do so.

Response

In summary, based on the additional traffic impact assessment completed as part of this Response to Submissions (Parsons Brinkerhoff, 2011) (refer **Appendix 3**), in relation to the proposed ETL relocation, the existing road system will be able to accommodate the associated traffic increase without changing the LoS of the roads trafficked by this project.

With respect to funding provided for road upgrades, Mangoola Coal has made contributions for all roads which service the Mangoola Coal Mine. Contributions from Mangoola Coal total approximately $11.8 million and include:

- Wybong Road West Safety Works - $520,000;
- Wybong Road East Upgrade - $7,830,000;
- Wybong Road/Mangoola Coal Mine Northern Access Road Intersection - $880,000;
- Golden Highway/Wybong Road Intersection - $1,280,000;
- Bengalla Road/Denman Road Intersection - $870,000; and
- Wybong Road West Maintenance - $420,000.

All road upgrades have been to a standard agreed with MSC which is based on Austroads standards.

Muswellbrook Shire Council (MSC) provided Mangoola Coal with a Notice of Practical Completion (PC)[5] for the Wybong Road Upgrade Construction with MSC determining PC was achieved 20 July 2010. The notification also included a list of minor defects and minor omissions to be rectified by a prescribed date.

In February 2011 MSC withdrew PC of the upgrade works due to localised failure of the road surface. Since this time, Mangoola Coal have been in discussion with MSC regarding the causes of the failures with tests being carried out on the road late 2010 and early 2011 to gather data from the pavement to assist in determining the cause of the failures. Based on information from these tests, Parsons Brinkerhoff produced an independent assessment on the likely causes of failure which was sent to MSC for review on 20 April 2011. To date no feedback on this report has been received.

In parallel with the process of determining the cause of failures, Mangoola Coal undertook to repair the failed sections of road which was completed on 19 April 2011. Following this Mangoola Coal have requested MSC re-issue PC for the road upgrade works.

Mangoola Coal have also undertaken to review the pavement failure report with MSC and, as required, undertake further work to complete the upgrade works.

The matters raised by WAG in relation to the broader road network are not matters that relate specifically and only to Mangoola Coal's proposed modifications. Indeed, many of the roads noted in Council's submission are primary access roads for other mines, businesses, agriculture, and tourism. Ongoing management and maintenance of the road network is the responsibility of MSC which will be funded by relevant road contributions and rates payments from all relevant land uses and land owners within the LGA.

[5] Dated 13 October 2010.

Submission

It is not clear from the Application which conditions the Proponent applies to have revoked or varied or whether the Proponent seeks a further condition.

Response

It is for the Minister for Planning to determine the Project Approval Conditions, and not a legal requirement for this Response to Submissions report.

Submission

WAG submits that a modification needs to be assessed not only against the degree of the proposed change to the prevailing consent conditions but also by reference to change in the various scientific and other considerations which underpinned the original consent – such as relating to climate change, biodiversity, landscape, noise, dust, water and other management strategies.

Response

The Mangoola Coal Mine is an approved project. The ETL relocation application was supported by a comprehensive EA prepared in accordance with DGRs and relevant legislation, policies and guidelines. The EA thoroughly addresses issues, concerns and impacts, based on sound scientific knowledge and thorough impact analysis, considering both approved and proposed operations.

Submission

The actual traffic volumes for the Bengalla Link Road, are twice that of those projected in the Bengalla Environmental Impact Statement and the heavy vehicle movements for Wybong Road are more than 50% higher than that projected in the Xstrata Mangoola Environmental Impact Assessment.

Response

A thorough traffic assessment has been undertaken for the project, including the additional traffic impact assessment in **Appendix 3**. This traffic assessment specifically addresses impacts on Bengalla Link Road and Wybong Road, from projected increased traffic generation and concludes that in relation to the proposed ETL relocation, the existing road system will be able to accommodate the associated traffic increase without changing the level of service of the roads trafficked by this project.

Submission

There is little suitable land available in the Shire for offset habitat and mining applicants have sought to acquire land in neighbouring LGAs to satisfy offset requirements. Against that background, there is the very real potential for the local extinction of ecological species. This is particularly true of orchids which are apparent for only short periods each year and which only exist on the site. In August 2009, for example, the Federal Environment Minister gazetted the *Prasophilum* Wybong (a local orchid) as critically endangered. The only population of the orchid is on the Mangoola lease area but was detected only after consent was granted for that operation. The management of offset plans to preserve habitats and species is increasingly problematic when in excess of half the rateable land mass of the Shire is subject to potential surface mining disturbance.

Response
In relation to this matter, the following is important to note with respect to the proposed ETL relocation and mine plan modifications:

- the land-based offsetting of ecological impact is a requirement of OEH and DP&I, and as per the *Principles for the Use of Biodiversity Offsets in NSW* (DECCW, 2008);

- all of the land proposed for offsetting for the Mangoola Coal Mine as part of the proposed modifications, is on Mangoola Coal owned[6] land within the Muswellbrook Local Government Area (LGA);

- *Prasophyllum* sp. Wybong is not restricted to the project area and has a wide distribution of populations with an extent of occurrence estimated to be 48,000 km². It is known from seven populations in eastern NSW near Ilford, Premer, Muswellbrook, Wybong, Yeoval, Inverell and Tenterfield; (www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=81964)

- The proposed Biodiversity Offset Areas and Wildlife Corridors contain known large populations of 'Muswellbrook's native orchids which are apparent for only short periods each year'. Surveys within the approved project disturbance area are conducted on an annual basis during the flowering periods of *Diuris tricolor* and *Prasophyllum* sp. Wybong (C. Phelps ORG 5269) for the purpose of documenting the number of plants to be disturbed (to inform the management strategy), and for translocation purposes. To date, considerable numbers of *Diuris tricolor* have been translocated from the approved project disturbance area into comparable habitat within the secure Biodiversity Offset Areas (refer **Section 2.2.3** of this Response to Submissions report for further detail on translocation of *Diuris tricolor* and *Prasophyllum* sp. Wybong). The ecological impact assessment for this Project specifically addressed the potential to impact on terrestrial orchids or their habitats, and ecological surveys carried out during their flowering periods; and

- The ROMP for the Mangoola Coal Mine provides detailed information relating to the protection and management of known and potential orchid habitat within the secured Biodiversity Offset Areas and Corridors.

Submission
The proposal does not conform to the Muswellbrook Shire Development Control Plan.

Response
The Muswellbrook Shire Development Control Plan is not relevant to the proposed project; the project application under the EP&A Act. Notwithstanding this a review of the provisions of the *Muswellbrook Local Environmental Plan 2009* (MLEP), which regulate planning and development within the shire of Muswellbrook, was completed as part of the EA (refer Section 5.2.2 of the EA).

The aims of the MLEP include:

(a) to encourage the proper management of the natural and human-made resources of Muswellbrook by protecting, enhancing or conserving:

(ii) timber, minerals, soils, water and other natural resources (clause 1.2(2)(a)(ii))

(g) to provide a secure future for agriculture by expanding Muswellbrook's economic base and minimising the loss or fragmentation of productive agricultural land. (clause 1.2(2)(g)).

[6] Xstrata Mangoola Pty Limited.

The zoning of land in the MLEP for the ETL relocation and permissibility is shown in **Table 3.1**.

Table 3.1 - Zoning and Permissibility, ETL Relocation, MLEP 2009

Project element	Zone in MLEP	Permissibility
ETL Relocation	E3 – Environmental Management, environmentally sensitive land	Permissible - see below
ETL Relocation	RU1 – Primary Production	Permissible - see below
Decommissioning of existing ETL	RU1 – Primary Production	Permissible - see below
Decommissioning of existing ETL	E3 – Environmental Management, environmentally sensitive land	Permissible - see below

The Environmentally Sensitive Land designation (Part 7 additional local provisions MLEP) means that:

(3) Development consent must not be granted for development on environmentally sensitive land—biodiversity unless the consent authority is satisfied that the development satisfies the objective of this clause and:

(a) the development is designed and will be located and managed to avoid any potential adverse environmental impact, or

(b) if a potential adverse environmental impact cannot be avoided, the development:

(i) is designed and located so as to have minimum adverse impact, and

(ii) incorporates effective measures to remedy or mitigate any adverse impact caused.

The provisions in Part 7, and the zoning restrictions, are subject to clause 5.12 of the MLEP, which states:

1) This Plan does not restrict or prohibit, or enable the restriction or prohibition of, the carrying out of any development, by or on behalf of a public authority, that is permitted to be carried out with or without consent, or that is exempt development, under the *State Environmental Planning Policy (Infrastructure) 2007*.

The aims of the State Environmental Planning Policy (Infrastructure) 2007, known as the Infrastructure SEPP, are as follows:

....to facilitate the effective delivery of infrastructure across the State by:

(a) improving regulatory certainty and efficiency through a consistent planning regime for infrastructure and the provision of services, and

(b) providing greater flexibility in the location of infrastructure and service facilities, and

(c) allowing for the efficient development, redevelopment or disposal of surplus government owned land, and

(d) identifying the environmental assessment category into which different types of infrastructure and services development fall (including identifying certain development of minimal environmental impact as exempt development), and

(e) identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure development, and

(f) providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing.

The Infrastructure SEPP streamlines the application of development controls for a number of types of developments listed in Part 3 of the SEPP. Division 5 of Part 3 of the Infrastructure SEPP includes electricity transmission or distribution.

Clause 41 specifies that:

(1) Development for the purpose of an electricity transmission or distribution network may be carried out by or on behalf of an electricity supply authority or public authority without consent on any land. ….

This means that the relocation of the ETL is permissible without consent and therefore the land zoning defined in the MLEP does not constrain the consideration of the project application of the proposed ETL.

3.2.1 Offsets

Submission

The route proposed by Xstrata Mangoola P/L to receive the 500kV transmission line by significantly negatively impacting on the regions that had been designated as Aboriginal Cultural Heritage Offset, Biodiversity Offset and Biodiversity Corridor, significantly impacts on the capacity of Xstrata Mangoola P/L to ensure "no net loss of flora and fauna values in the medium to long term".

Response

The proposed Biodiversity Corridors will not be impacted by this proposed project. Impacts to the existing Aboriginal Cultural Heritage Offset (overlapping with part of the Biodiversity Offset Areas) have been minimised as part of the planning for the ETL relocation, as much as possible. The Ecological Assessment completed as part of the EA (Appendix B1 of the EA) documents the components of this impact minimisation, including (but not limited to):

- avoidance of impact via route selection;
- tower relocation to reduce impact on existing Biodiversity Offset Areas;
- commitment to easement maintenance regime that reduces vegetation loss and fragmentation; and
- avoidance of hollow-bearing trees.

The residual impact or disturbance of 14.9 hectares of vegetation community by the ETL relocation has been addressed by provision of an Additional Biodiversity Offset Area (64 hectares in total) that will be included within the overall ROMP for the Mangoola Coal Mine, to ensure integrated protection, improvement, management and monitoring of these habitats within the Mangoola Coal Mine. The additional biodiversity offset area size, location, connectivity and vegetation community composition has regard to 'no net loss of flora and fauna values in the medium to long term'.

3.2.2 Alternative ETL Route

Submission

The Wybong Community asks that Xstrata Mangoola P/L seriously consider and model the alternate route proposed by our Community for the economic, social and ecologically sustainable development reasons given.

We believe that the alternate route provides Xstrata Mangoola Pty Ltd with all of the benefits of the transmission line relocation whilst retaining unimpeded the high scenic values of Wallaby Rocks and the Wybong Valley together with maintaining as much old growth and hollow bearing arboreal habitat and intact canopy onto the north and east facing rocky slopes of Wallaby Rocks, Limb of Addy and Western Rocks regions of the PDA, it biodiversity offset and biodiversity corridor attributes and functions as possible.

The Wybong Community believes also that it is in the mutual best interest of their Community, the Muswellbrook Shire and Xstrata Mangoola Pty Ltd to retain as much Aboriginal pre-history as undisturbed possible including the rock shelter habitats of EPBC listed bat and mammal species, Aboriginal sites, artefacts and scatters located most extensively in the vicinity of Limb of Addy Hill, the Western Rocks and Wallaby Rocks.

We believe that the route proposed by Xstrata Mangoola Pty Ltd does not provide sufficient protection for the important regional biodiversity functions of this substantially intact corridor from Myambat and Wollemi/Goulbourn River NP to Manobalai NT and the forested Ridgelands of the Wybong Valley that are integral to the closure of the Greater Eastern Ranges Initiative in the Hunter Region.

The Xstrata proposed south and western route has a higher impact on threatened flora than the Community proposed North Eastern Route.

The Wybong Community expresses a clear preference toward the North ETL Route to which there is no valid objection – the preceding diagrams clearly identifying the minimal impacts of the North Route on SC10, Aboriginal sites, Threatened flora and fauna species and vegetation communities. The sterilisation argument is self defeating in that the area referred to by Mangoola is Open Canopy Slaty Box Woodland (TSC) worthy of inclusion in habitat offset and the northern biodiversity corridor. Also, the Application (and other similar relocations of ETL's) dispenses with the myth that the ETL infrastructure "sterilises". Equally, the Application does not seek to extract coal from beneath the North Route nor is there any approved mining lease in that area.

Response

As part of the strategic review process conducted by Mangoola Coal for the proposed ETL relocation, and prior to proceeding with the project application, a detailed feasibility analysis of the preferred ETL route was conducted. Section 3.1 of the EA provides the justification for the relocation and Section 3.3 details the alternatives considered. Alternatives considered include:

- no relocation of the ETL;
- Option 1 - relocation of the ETL to the north and east of the approved project disturbance area; and
- Option 2 - relocation of the ETL to the west and south, outside of the approved project disturbance area.

Alternative route options are illustrated in **Figure 3.1.**

During the community consultation sessions held for the proposed mine plan modifications and ETL relocation, the WAG also proposed a version of the north and east route as an alternative. Mangoola Coal provided a specific written response to WAG on 14 August 2009 (refer to **Appendix 4**) in relation to their proposed route for the 500 kV ETL which Mangoola Coal considers to not be a feasible option. The option is not considered feasible for the same reasons that the north and east route was not preferred, i.e.:

- it traverses considerable areas of the approved Conservation Offset Area (which has been established as an offset for both Aboriginal cultural heritage and ecological values) and habitat enhancement areas;

- the vegetation communities which occur on the east of the approved project disturbance boundary have recently been listed as preliminary EECs following a preliminary determination by the NSW Scientific Committee;

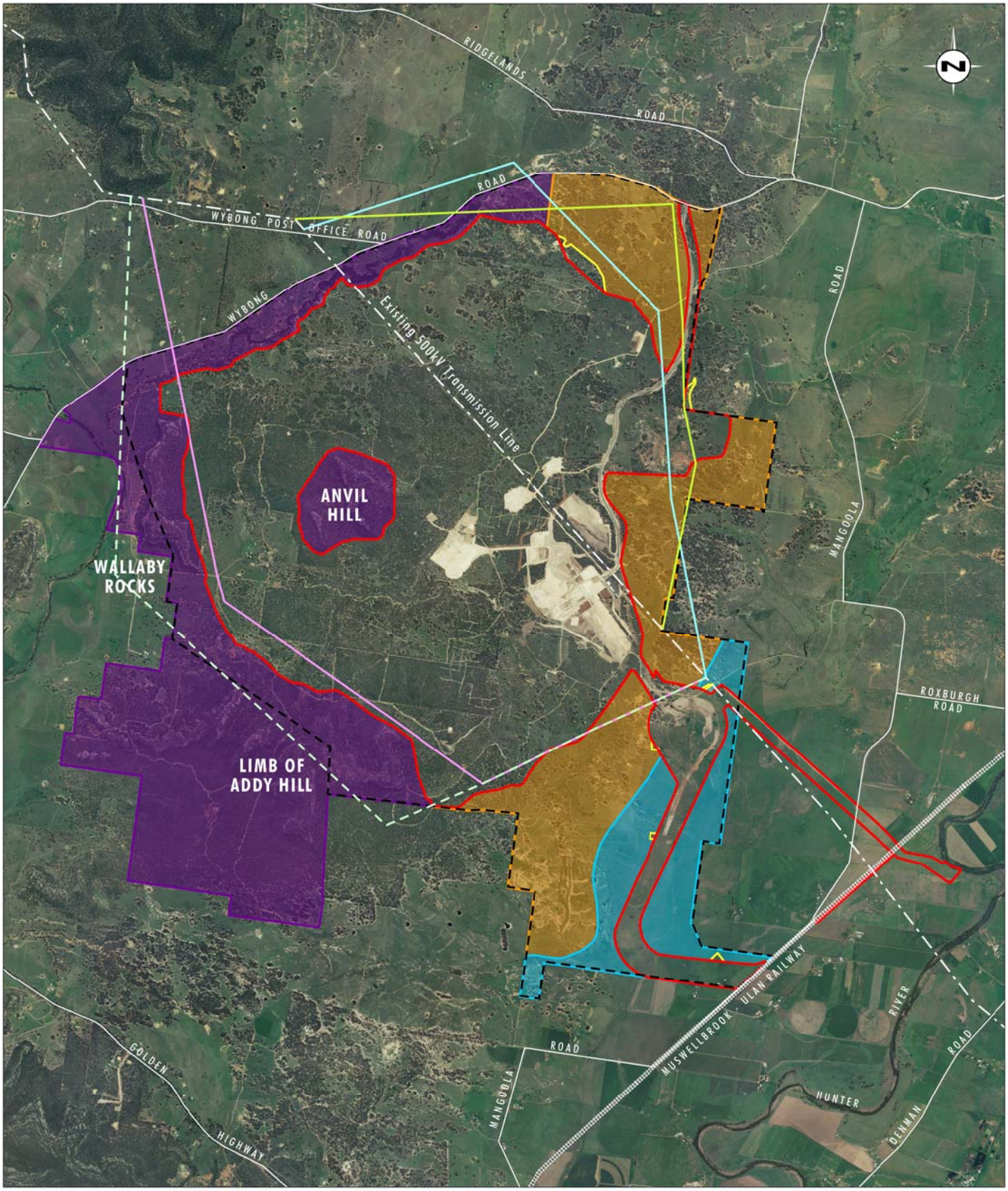
- there are known coal reserves to the north of the approved project disturbance boundary, with varying potential for access to reserves through both open cut and underground mining, with a northern location for the ETL relocation potentially sterilising reserves accessible by open cut mining (i.e. the chosen location of the ETL relocation considered the viability of resource access, with the route chosen sterilising the least accessible reserves, those which require underground access for mining); and

- the location of the route along the northern boundary would run parallel to Wybong Road, creating a linear feature and visual impact obvious to motorists on Wybong Road for several kilometres, rather than creating a single point where motorists will cross under the line.

As noted above, there are potentially viable coal reserves to the north of the approved project. Mangoola Coal currently holds Exploration Licence No 5552, which covers four areas (totalling 229.3 hectares), including an area to the north of Wybong Post Office Road into which the alternative route proposed realignment extends and rejoins the Bayswater to Mount Piper transmission line. The proposed northern ETL relocation option suggested by WAG would sterilise the coal resource in this area.

It should also be noted that Mangoola Coal also holds an Assessment Lease (No 9 (ACT 1992)) which covers an area of 4139 hectares. An Assessment Lease is designed to allow retention of rights over an area in which a significant deposit has been identified, if mining the deposit is not commercially viable in the short term but there is a reasonable prospect that it will be in the longer term. The holder is allowed to continue prospecting operations and to recover minerals in the course of assessing the viability of commercial mining.

Essentially, an Assessment Lease is designed to allow the developer to maintain a title over a potential project area, without necessarily having to commit to further exploration, as would normally be the case with the retention of an Exploration Licence. However, these leases are not intended to allow the holders to tie up resources indefinitely and there is an expectation that there will be direct expenditure on the area (www.dpi.nsw.gov.au/minerals). Mangoola Coal will investigate opportunities to access this resource in the future). It is prudent to relocate the ETL away from this potential resource now rather than risk relocating the ETL again. The ETL relocation aims to manage the resource for potential future access/use.



Source: Dept. of Lands (2003), Xstrata Mangoola (2010)

0 1.0 2.0 3km
1:55 000

Legend

- Approved Project Disturbance Boundary
- Mining Lease 1626 Boundary
- Modified Project Disturbance Boundary
- Alternative 500kV ETL Option 1
- Alternative 500kV ETL Option 2
- Proposed 500kV ETL Option 3
- Wybong Action Group's Proposed ETL Route
- Existing 500kV ETL
- Conservation Offset
- Habitat Enhancement Offset
- Sustainable Agriculture Offset

FIGURE 3.1

Alternate Route Options
Electricity Transmission Line

File Name (A4): R20_SecA_V1/2497_358.dgn

The Preferred Route

The preferred route is located within the western boundary of the approved project disturbance area and on largely cleared land to the south and north of the approved project disturbance boundary.

This option was considered preferable due to the relative balance of impacts on areas set aside under existing commitments. It was chosen despite a net sterilisation of approximately 5 million tonnes of resource, or half a year supply at the currently approved maximum production rate of 10.5 million tonnes per annum (Mtpa). This sterilisation of resources is due to the ETL relocation being located over an area that has been approved for mining, coupled with the need to have mining operations set back in order to manage blasting impacts on the ETL. However, in order to balance the impacts on areas with conservation value, and minimise additional ground disturbance beyond the already approved disturbance area, this option has been chosen as the preferred route.

Following the choice of this route as the preferred route, detailed design work has been undertaken, and the location of the route has been refined. The major difference between the conceptual and detailed design is the southern section of the route in the vicinity of the rail loop. The proposed route has been modified to connect the new line to a tower on the existing route that is not within the SC10 Management Zone in order to minimise impacts and to minimise interference with the operation of the rail loop.

In conclusion, the preferred route for the ETL relocation has been chosen to minimise the impact on the environment and as far as possible keep the route within the approved project disturbance area. These considerations are outlined below:

- The proposed ETL relocation is situated on the eastern side of Wallaby Rocks and will only be visible for a small portion of its extent when viewed from the west – that is at the point where the line emerges from Wallaby Rocks to rejoin the existing Bayswater to Mount Piper 500 kV line. It is effectively shielded for the majority of its route by either the natural landform on the south and western side, or by the mine itself when viewed from the north. The proposed ETL is located entirely within the proposed disturbance area, adjacent to Wallaby Rocks, and will cause no additional disturbance of this area;

- As noted above, the majority of the ETL relocation (5.8 kilometres) is within the approved project disturbance area, meaning that this area is already approved to be cleared and there are no additional ground disturbance related impacts from the currently approved project; and

- The tower locations outside the approved project disturbance area have been chosen following a due diligence process to minimise impacts on archaeological sites and ecological species and communities.

The preferred ETL relocation route traverses a small area (approximately 400 metres) of the approved Big Flat Creek Conservation Offset Area (which has been established as an offset for both Aboriginal cultural heritage and ecological values) and the potential impact on this area has been minimised through the siting of towers on either side of this area. Construction and associated activities, as well as later operational maintenance inspection activities, will utilise existing access tracks to minimise vegetation clearance and ground disturbance. Any maintenance vegetation lopping (for safety-grounding purposes) will endeavour to minimise vegetation disturbance that may threaten flora, habitat or connectivity of corridors or ecological communities. The proposed ETL relocation route will therefore not have a significant impact on regional habitat corridors or connectivity.

3.2.3 Electric and Magnetic Fields

Submission

"a huge effect in the growth of rats exposed to an electromagnetic field having an amplitude of 40 µT and a frequency of about 31 Hz is reported. Changes in several metabolic parameters as a consequence of exposure to electromagnetic fields have been also observed." The presence of micro-bat species in the immediate vicinity of the existing ETL in NO WAY suggests that there is no impact of EMF on the ability of these species to utilise areas underneath or near existing ETLs of the same capacity or of habitat change through increased metabolic rate and skin temperatures and increased competition or predation.

As regards Human health "..statistical associations between prolonged exposure to elevated magnetic fields and childhood leukaemia have persisted. This led the International Agency for Research on Cancer (IARC) in 2001 to classify magnetic fields as a "possible carcinogen" There is no reason afforded as to the failure to determine impact on susceptible species such bats and other native mammals whose habitat range is restricted to an area subject to permanent EMF exposure of the type created by the 500kV 50Hz powerline.

"It is essential that exposure limits be implemented in order to protect against the established adverse effects of exposure to ELF electric and magnetic fields. These exposure limits should be based on a thorough examination of all the relevant scientific evidence. Only the acute effects have been established and there are two international exposure limit guidelines (ICNIRP, 1998a; IEEE, 2002) designed to protect against these effects. As well as these established acute effects, there are uncertainties about the existence of chronic effects, because of the limited evidence for a link between exposure to ELF magnetic fields and childhood leukaemia. Therefore the use of the precautionary principle is warranted.

In the broader context of an environmental assessment, it is also appropriate to recognise the possibility that, fields up to approximately twice those presented…could be experienced in some places.

Investigation provides "initial evidence that long term exposure to well defined electromagnetic fields may have relevant effects in mammals, thus affecting parameters like body weight, blood glucose and fatty acid metabolism".

Xstrata Mangoola have not taken the opportunity to test captive bat populations for the effects of continual exposure to the EMF or construct any research of determinative style instead relying on interpolation and supposition to concerns regarding the bats long-term exposure to the EMF in a diminishing and restricted habitat. Hence strong concerns regarding the continuance of bat colonies on Wallaby Rock (and elsewhere equally affected) remain unanswered.

Subjecting 100% of an interface escarpment habitat including EPBC listed bat species roost and potential Brush Tailed Rock Wallaby and Koala habitat to permanent exposure to elevated EMF.

Response

Potential impacts from electric and magnetic fields (EMF) associated with the ETL relocation were identified as a key environmental issue during consultation and in the environment and community risk assessment undertaken during the Preliminary Environmental Assessment. Consequently, a detailed EMF assessment was prepared as part of the EA for the project (refer Appendix B4 of the EA), the findings of which indicate that EMF is likely to have no adverse impacts on either people or fauna. The report also specifically addresses issues

raised by the WAG during EA consultation regarding a proposed alternative route for the ETL relocation.

The potential EMF impacts associated with the ETL relocation have been assessed and compared against the relevant standards and guidelines. In summary, the EMF produced by the ETL relocation will be consistent with those produced by the existing ETL. EMF levels decrease with distance from the source and will be well below the guideline levels at all residences within the vicinity of the ETL relocation.

The conclusion regarding potential impacts on bat species at Wallaby Rock are as follows: 'One cave (AC38) has been identified within reasonable proximity (approximately 67 metres) of the relocated ETL easement as providing bat habitat. The predicted magnetic field at site AC38 is 1.2 mG initially, increasing to 4 mG over the life of the ETL. Due to the effects of distance and the shielding effect of the terrain, the cave and vegetation, the electric field within all caves is expected to be virtually zero'.

In conclusion, based on this assessment and a review of currently available scientific evidence in relation to effects of EMF on fauna, there is no evidence to support any concern regarding the influence of EMF associated with the proposed ETL relocation on native fauna in the area. There is no need for the testing of captive bat populations to assess the effects of EMF.

Despite the unlikely EMF impacts the principles of prudent avoidance have been incorporated into the design and operation of the ETL relocation. Under this approach, subject to modest cost and reasonable convenience, power utilities should configure their facilities to reduce the intensity of the fields they generate and locate them to minimise the fields that people, especially children, experience over prolonged periods.

The principles of prudent avoidance have been incorporated into the design and operation of the ETL relocation to minimise EMF levels and potential impacts, and no specific additional environmental controls are proposed.

It is unclear where the opening statement in the above submission is from as no reference has been provided.

3.2.4 Aboriginal Offsets

Submission

"However, based on comments received from the relevant aboriginal stakeholders, Mangoola Coal has committed to the establishment of a suitable culturally appropriate offset to be determined following additional consultation with the relevant Aboriginal stakeholders"

Such an open-ended commitment belies approval particularly as Xstrata Mangoola have not complied with consent conditions themselves and have sought by progressive modification applications and stealth to avoid comprehensive review of their intention to supplant the original mine plan, expert panel review and consent with a radically different mine plan. Clearly (see fig 5.26) the western ETL Route is a far greater interference, steriliser and potential destroyer of Aboriginal Heritage than either the existing or NE ETL Routes, recognising that the NE Route as shown is capable of slight modification to remove impact on SC10.

Response
The ETL relocation will result in the removal of two existing towers located within the SC03 management zone and the Big Flat Creek Aboriginal Cultural Heritage Offset Area (ACHOA), with the new alignment designed to ensure that no new towers are required within the existing offset areas and that vegetation clearance and ground disturbance within these areas are minimised.

In comparison, the WAG proposed ETL alignment impacts a length of almost 3 kilometres within the Big Flat Creek ACHOA in an area containing a number of recorded archaeological sites. It is assumed it would not be possible to span a 3 kilometre length at the proposed angle and therefore this would require the establishment of a new tower or towers within the Big Flat Creek ACHOA, thereby resulting in a higher level of impact to the Aboriginal cultural heritage values of this area and potentially requiring a greater level of harm to Aboriginal objects. **Figure 3.2** illustrates the location of isolated finds and archaeological artefact scatters within the Big Flat Creek ACHOA, offset areas, the proposed WAG ETL alignment and the preferred option.

Submission
Clearly again however the Aboriginal Heritage Management Zone SC10 is more appropriately relocated from its current positioning adjacent to the CHPP, MIA and rail loop to a more culturally appropriate area in the vicinity of Wallaby Rock/Western Rocks where the majority of scatters, PAD's, cave habitats and undisturbed native flora and fauna domicile and is more remote from the mine infrastructure, dust, noise and distraction of active workings.

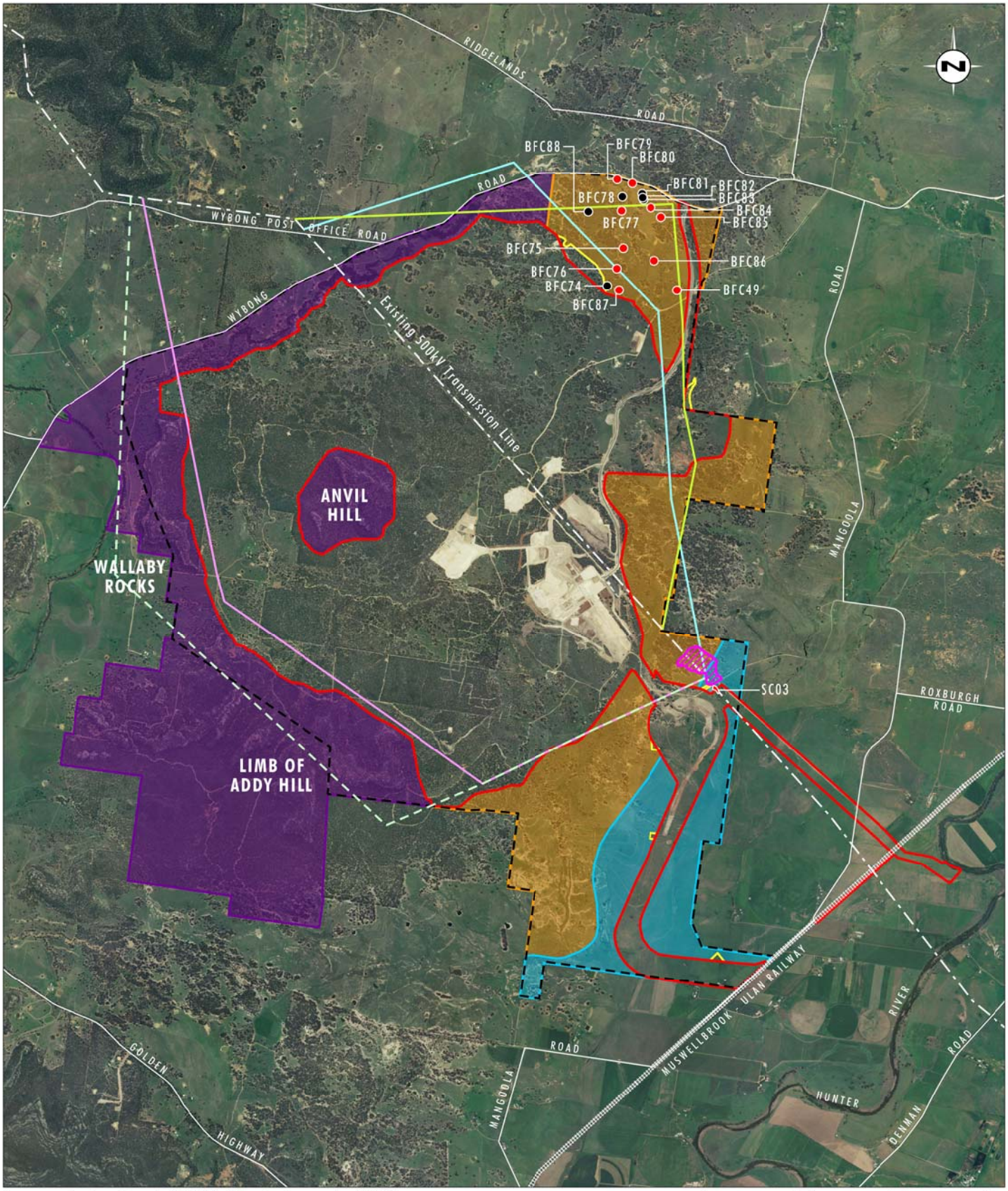
Response
Mangoola Coal has identified to Registered Aboriginal Parties that there is potential for a land offset available to the west of Wallaby Rocks; the process of consultation is continuing and the majority of the Registered Aboriginal Parties have indicated that they wish to inspect the area to consider its Aboriginal cultural values. This inspection will be arranged as part of upcoming cultural heritage work at Mangoola Coal Mine and the outcomes reported to DP&I and the OEH.

A decision regarding appropriate offset will be made in consultation with OEH, DP&I and Registered Aboriginal Parties. Regardless of the location of any additional agreed offsets, the maintenance of the SC10 management zone (refer **Figure 3.2**) forms part of the existing conditions of approval and is not proposed to modify any such condition relating to the SC10 management zone.

Submission
The partially relocated route selected by Xstrata is also the most visually obtrusive route (by a large factor) of the two major competing options i.e. NE or SW.

Response
As part of the EA for the ETL relocation, a Visual Amenity Assessment was completed (refer Appendix B3 of the EA). The assessment included a comparison of the existing and proposed alignment for the ETL.

The assessment concluded that the visual impacts of the passage of the ETL relocation through the offset areas are of no greater significance than the impacts currently arising from the existing ETL where it traverses the Big Flat Creek Conservation Area, when considered from the adjacent viewpoints to each area (refer **Figure 3.3**). The visual impact of the easement clearing through the Conservation Offset Area will be evident at a time when the area becomes more heavily vegetated and the difference between the Conservation Area



Source: Dept. of Lands (2003), Xstrata Mangoola (2010)

0 1.0 2.0 3km
1:55 000

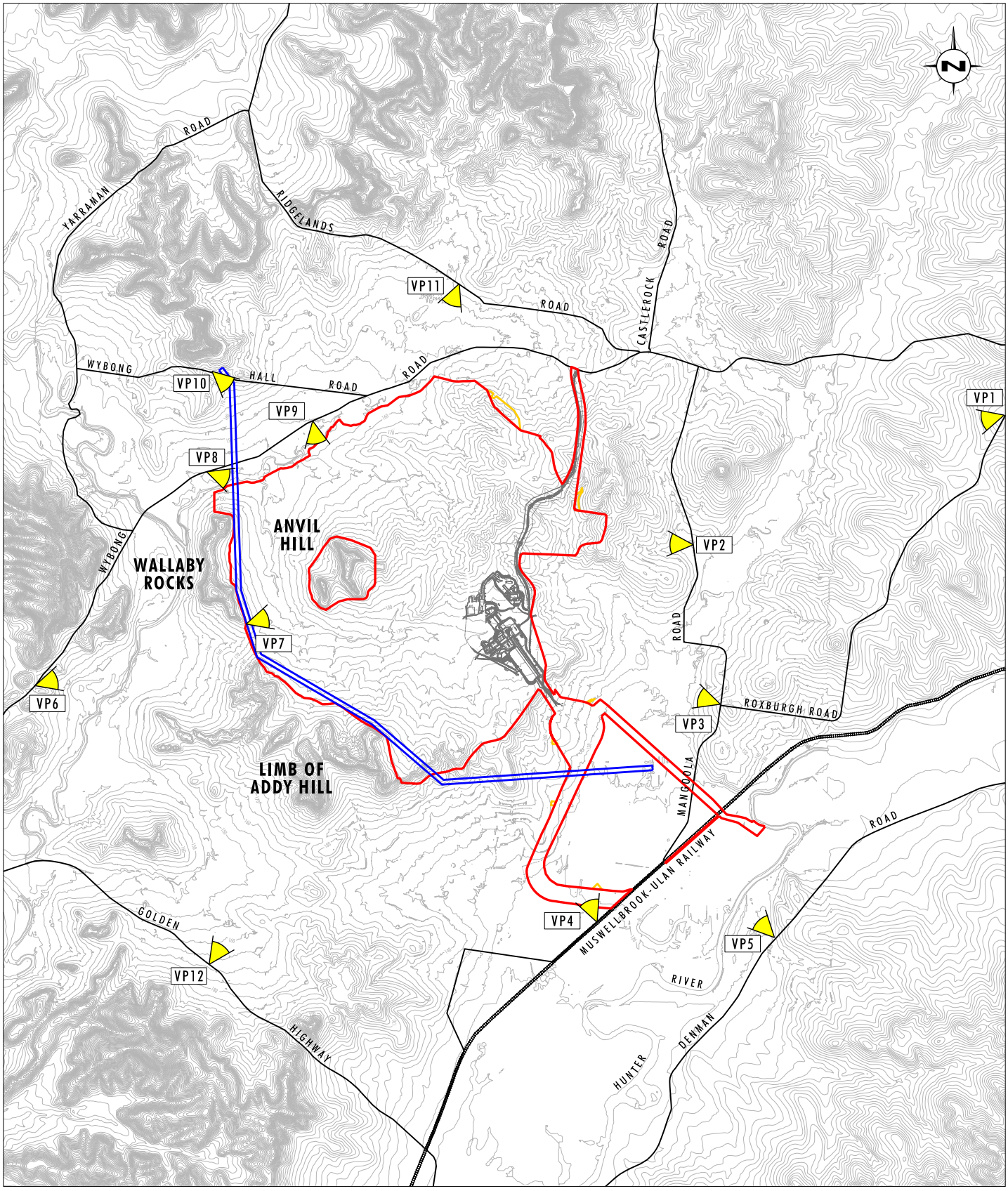
Legend

- Approved Project Disturbance Boundary
- Mining Lease 1626 Boundary
- Modified Project Disturbance Boundary
- Alternative 500kV ETL Option 1
- Alternative 500kV ETL Option 2
- Proposed 500kV ETL Option 3
- Wybong Action Group's Proposed ETL Route
- Existing 500kV ETL
- Conservation Offset
- Habitat Enhancement Offset
- Sustainable Agriculture Offset
- SC10 Management Zone
- Isolated Find
- Artefact Scatter

File Name (A4): R20_SecA_V1/2497_357.dgn

FIGURE 3.2

Isolated Finds and Artefact Scatters in the Big Flat Creek ACHOA



Source: O'Hanlon Design (2006)
Base Map: Dept. of Lands (2003), ortho-rectified by Plateau Images

0 1 2 4 km
1:80 000

Legend

- Approved Project Disturbance Boundary
- Proposed 500kV ETL Relocation
- Modified Project Disturbance Boundary
- Viewpoint
- VP6 Viewpoint Number

FIGURE 3.3

Visual Assessment Locations
Electricity Transmission Line
Preferred Route