

ASSESSMENT REPORT

BULGA OPEN CUT MINE Western Mining Limit Modification (DA 41-03-99 Mod 7)

1 BACKGROUND

Bulga Coal Management Pty Ltd is a subsidiary of Xstrata Coal (Xstrata) which operates the Bulga Coal Complex, located 12 kilometres (km) southwest of Singleton in the Hunter Valley (see **Figure 1**). The Complex includes the Bulga Open Cut Mine, the Bulga Underground Mine, a Coal Handling and Preparation Plant (CHPP) and a rail loop.

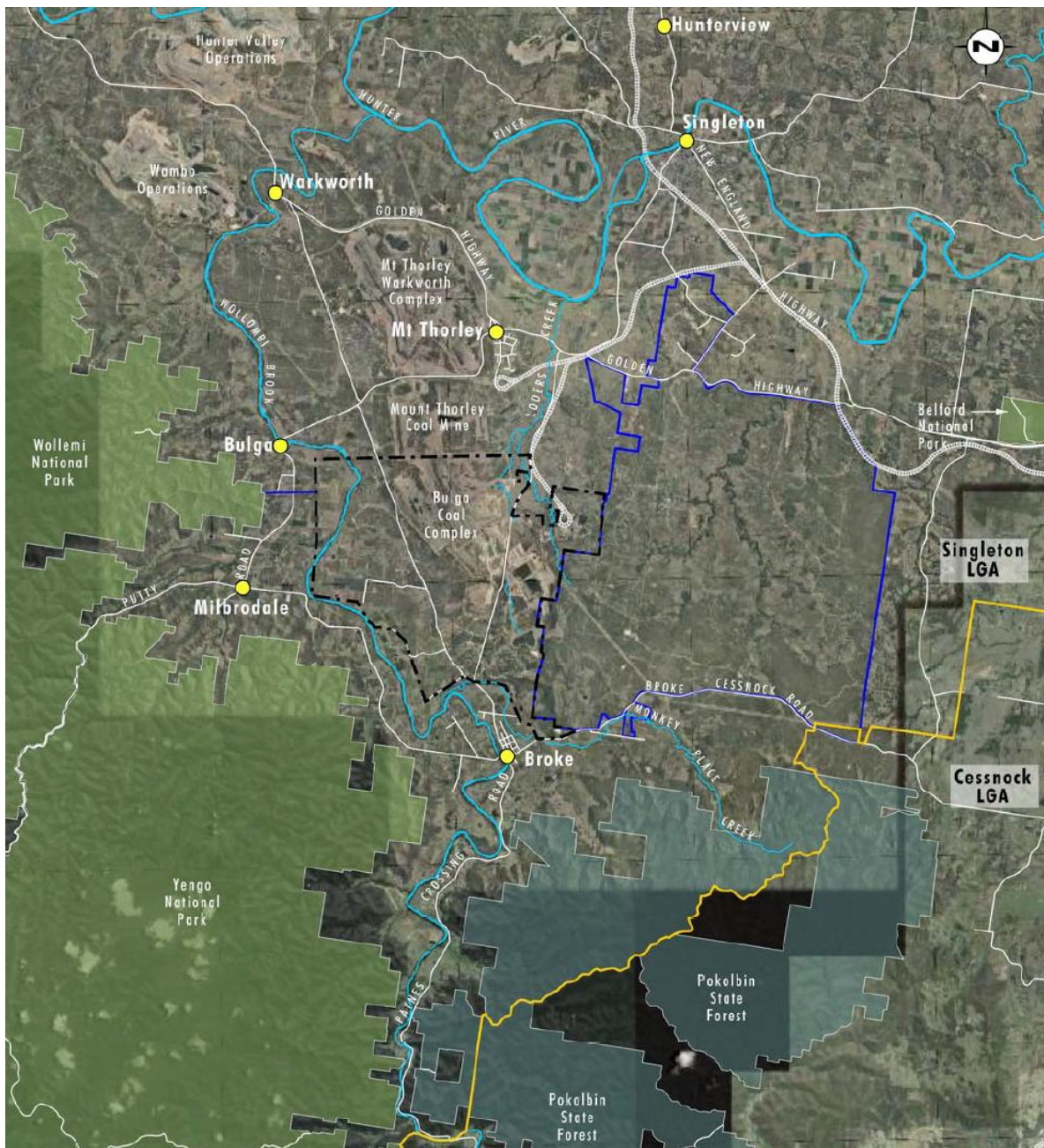


Figure 1 - Locality Map showing the Bulga Coal Complex

The Bulga Coal Complex is the southernmost mining operation in the Upper Hunter coal fields. The Mount Thorley – Warkworth Coal Complex lies immediately to the north, and the Singleton Military Training Area is immediately to the east. The nearest villages are Broke, about 3.5 km to the south; Milbrodale, about 3.5 km to the west; and Bulga, about 3.5 km to the northwest. A range of agricultural enterprises west of the mine are associated with the alluvial soils of the Wollombi Brook.

While operating under two consents, which separately govern the open cut and underground operations, the Bulga Coal Complex is managed as a single integrated mine. **Figure 2** shows the overall layout of the Complex. The mine employs about 1,000 people and currently produces about 16 million tonnes per annum (Mtpa) of thermal and semi-soft coking coal. Product coal is shipped by rail 90 km to the Port of Newcastle, and thereafter exported primarily to Japan and China for energy production and steel making.

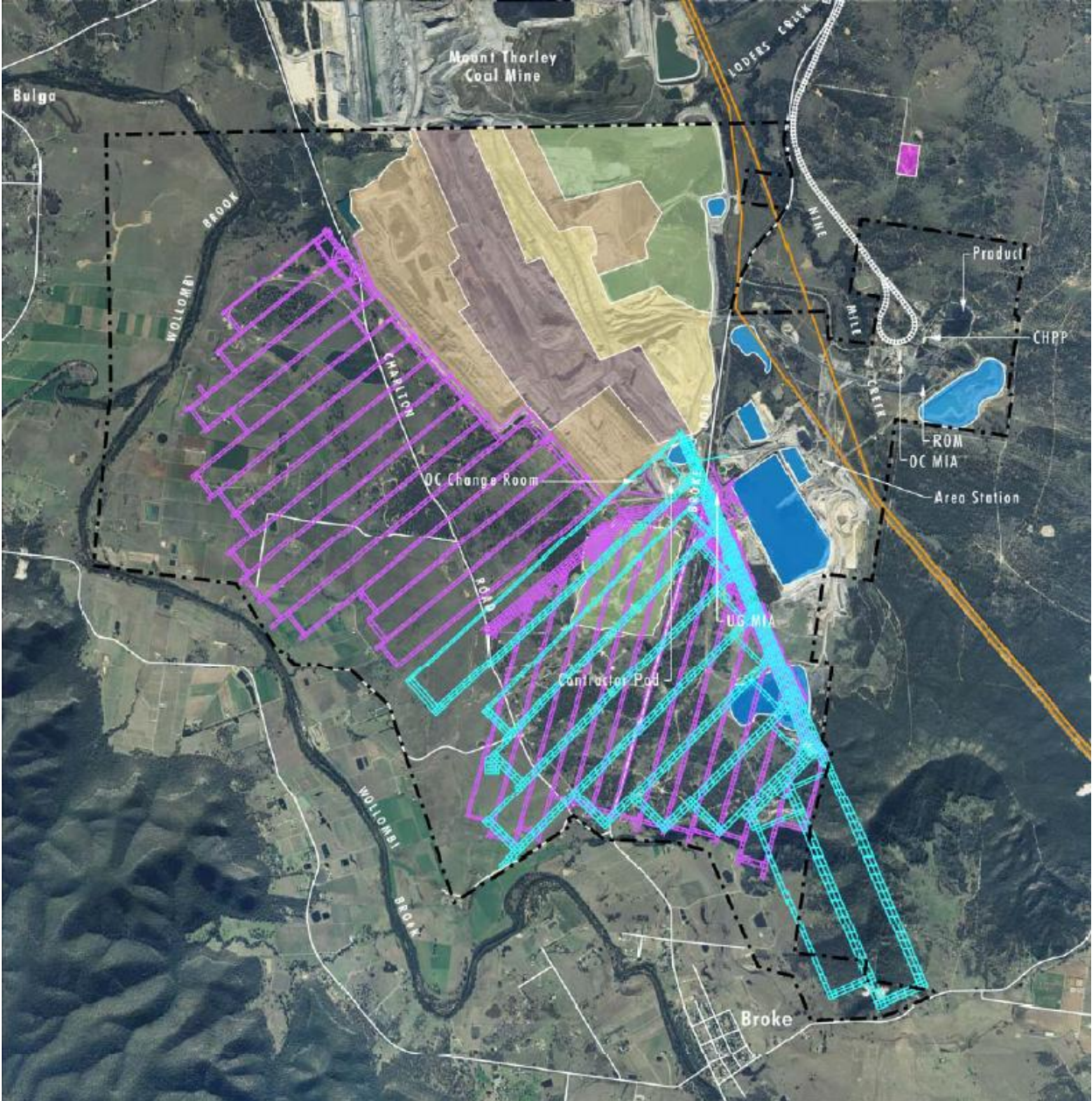


Figure 2 - Current open cut and underground operations at the Bulga Coal Complex

1.1 Open Cut Operation

The Bulga Open Cut Mine operates under Ministerial consent DA 41-03-99, which was granted in December 1999 and consolidated all previous open cut consents. Under this consent, Xstrata may extract up to 12.2 Mtpa of run of mine (ROM) coal using open cut methods until 2025. The open cut consent has previously been modified 6 times, as follows:

- change the mining commencement date (Modification 1, 2001);
- an office addition (Modification 2, 2008);
- increase the coal handling plant dam (Modification 3, 2008);
- a second increase to the coal handling plant dam (Modification 4, 2009);
- contemporary noise conditions based on the *Industrial Noise Policy* (Modification 5, 2010); and
- a new rail refuelling facility (Modification 6, 2011).

Figure 3 shows the existing layout of the open cut operation. Open cut mining is taking place in the Bulga Pit. The Deep Pit is used for the disposal of tailings from the CHPP and the Vaux and Bayswater Pits are used to store water. Further mining may occur in the Vaux Pit under the current consent, if this water is removed.

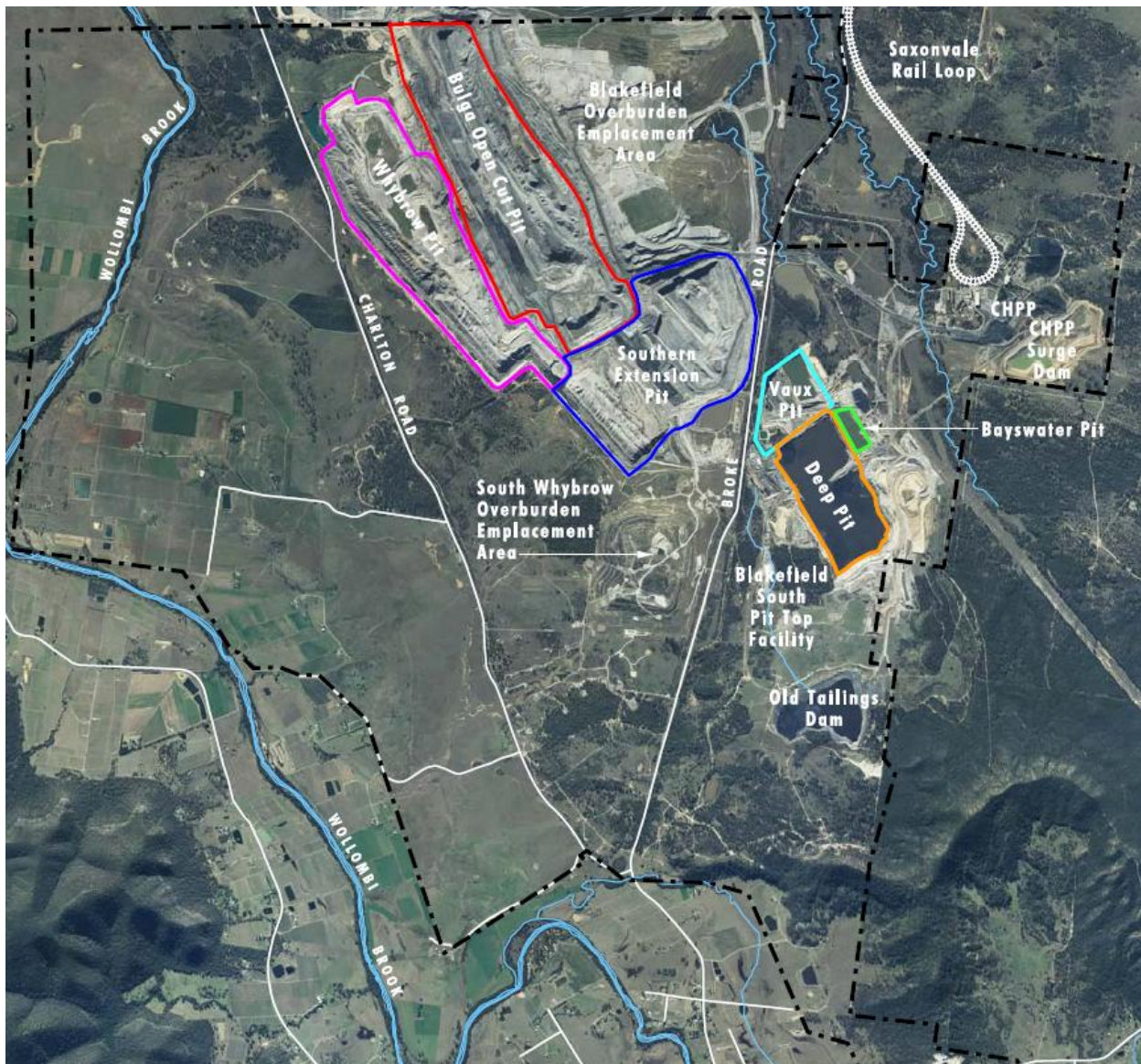


Figure 3 - Extraction pits and other key components of the Bulga Open Cut Mine

2 PROPOSED MODIFICATION

Open cut mining in the Bulga Pit will shortly reach the pit's approved western limit earlier than previously planned. To ensure the continuity of open cut mining, Xstrata proposes to extend the Bulga Pit into previously disturbed areas to access additional coal reserves beneath the Whybrow pit. The proposed modification to DA 41-03-99 comprises three main components:

- extending two small parts of the Bulga Pit to the west to recover an additional 1 million tonnes of ROM coal over a period of about 7 years from seams beneath the floor of the previously-mined Whybrow Pit;
- re-handling about 10 million bank cubic metres (Mbcm) of overburden, including re-emplacment of some of this material on the common boundary between the Bulga Coal Complex and the Mount Thorley – Warkworth Coal Complex. This emplacement area would partly fill the valley between the two mines created by existing overburden emplacements; and
- realigning the access slot for Xstrata’s approved Blakefield North Underground Mine.

The modification would also require changes to haul routes and final landforms. However, there are no changes to the maximum approved ROM coal extraction rate (12.2 Mtpa) and all other aspects of the approved mining operations would remain the same. Key elements of the proposed modification are shown in **Figure 4**. The modification is described in detail in the Environmental Assessment (EA) (attached as Appendix B).

Xstrata has also recently lodged a development application and draft Environmental Impact Statement (EIS) for the Bulga Open Cut Optimisation Project (SSD-4960). This application would provide for a ten year extension to open cut mining at the Bulga Coal Complex, with an additional 180 million tonnes of coal to be mined from deeper coal seams within the existing mine disturbance footprint. This EIS has not yet been publicly exhibited. The current modification proposal would be integrated within the Bulga Open Cut Optimisation Project, if both are approved.

The two proposed extensions of the Bulga Pit would serve separate purposes. The small northern extension (outlined in yellow on Figure 4) would effectively develop a deep access slot and mining face to enable the extensive north-to-south re-mining of the 6 accessible seams located beneath the remainder of the Whybrow Pit, which is proposed as part of the Bulga Open Cut Optimisation Project. Most of this northern area has been previously mined and rehabilitated (see Figure 4). The purpose of the smaller southern extension is solely to develop the necessary access slot for the approved Blakefield North Mine, which has not yet been developed.

3 STATUTORY CONTEXT

3.1 Legislative Framework and Approval Authority

The development consent for the Bulga Open Cut Mine was granted under Part 4 of the *Environmental Planning and Assessment Act 1979* (the Act). Clause 8J(8) of the *Environmental Planning and Assessment Regulation 2000* requires modifications of such development consents to be carried out under section 75W of the Act. The effect of section 75W is continued for such consents by clause 12 of schedule 6A of the Act.

Under section 75W of the Act, the Minister for Planning and Infrastructure is the approval authority for this modification application. However, the Director Mining and Industry Projects may determine the application under the Minister’s delegation of 14 September 2011, as:

- less than 25 public submissions have been received that are in the nature of an objection;
- Xstrata has not made any reportable political donations; and
- Singleton Council has not objected to the proposal.

3.2 Modification

The Department is satisfied that the proposed modification can properly be characterised as a modification to the original development consent, and can therefore be assessed and determined under Section 75W of the Act. In this respect, the Department notes that the additional coal to be recovered is a small fraction of the mine’s annual and total approved coal production. The additional mining does not require an extension of the mine’s existing disturbance footprint. The additional overburden emplacement also does not extend the disturbance footprint of either the mine or the adjoining Mount Thorley – Warkworth Coal Complex.

3.3 Exhibition and Notification

Under Section 75W of the Act the Department is not required to notify or exhibit the modification application. However, after accepting the EA for the application, the Department:

- made the EA publicly available from 28 September 2012 until 16 October 2012:
 - on the Department’s website,
 - at the Department’s Information Centre and Singleton Shire Council, and
 - at the offices of the Nature Conservation Council;
- notified relevant State government authorities and Singleton Council by email; and
- advertised the exhibition in the Singleton Argus newspaper.

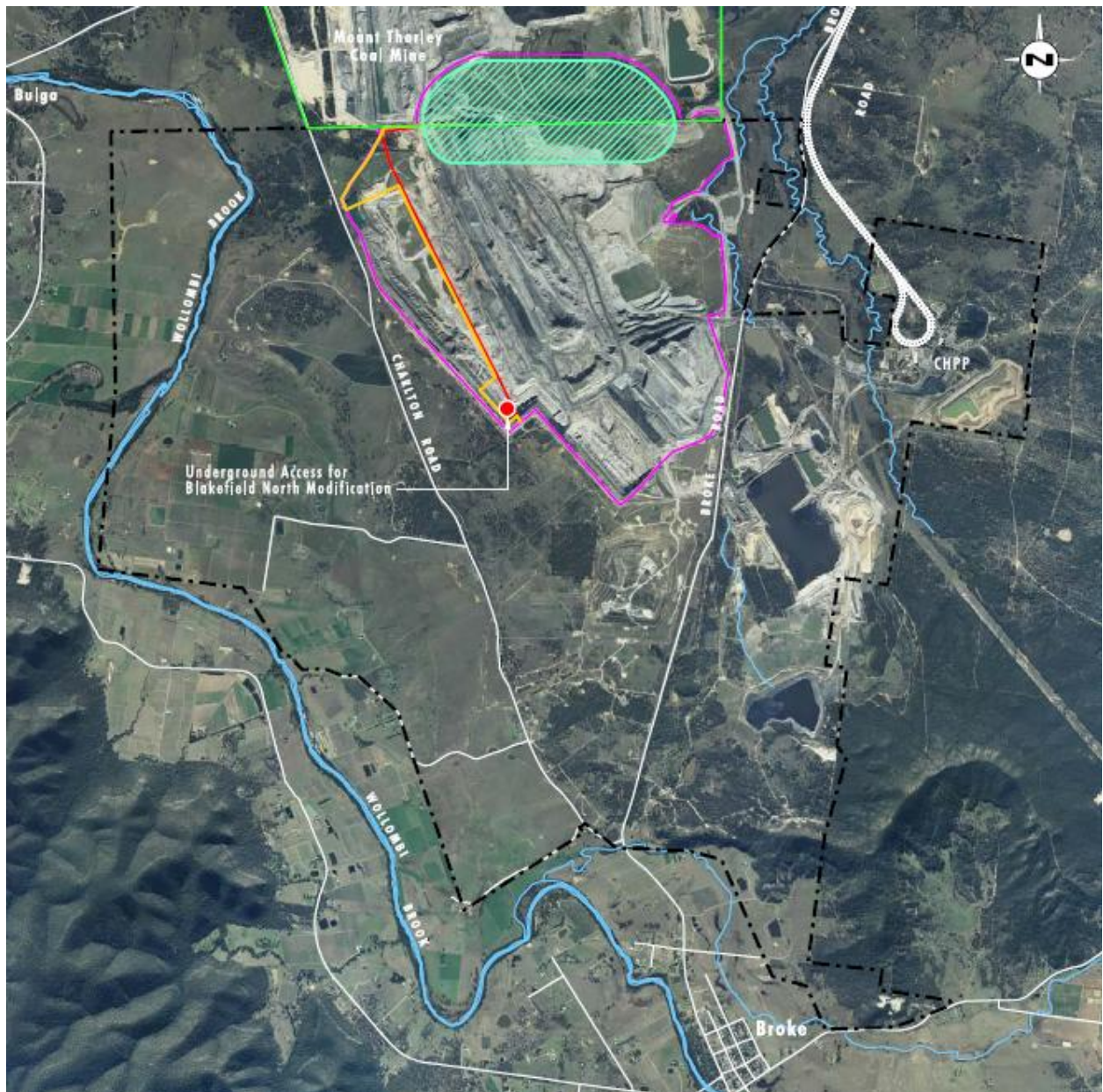


Figure 4 - Proposed extensions to the western open cut limit and northern boundary emplacement area

During the assessment process the Department also made a number of documents available for viewing or download on its website. These documents included the:

- modification application;
- EA (see Appendix B);
- agency and public submissions (see Appendix C); and
- Xstrata's response to the issues raised in submissions (see Appendix D)

4 CONSULTATION

Following public exhibition, the Department received 5 submissions on the proposal, including 4 from public authorities and one from a member of the public (attached in Appendix C). A summary of the issues raised is provided below.

4.1 Public Authorities

The **Office of Environment and Heritage** (OEH), **Fisheries NSW** and the **NSW Office of Water** (NOW) did not raise any particular objection to the project. OEH is satisfied that a small additional disturbance of an Endangered Ecological Community (EEC) can be appropriately offset, while NOW is satisfied that there are no additional water-related impacts. NOW has proposed additional groundwater monitoring adjacent to the modification area. The Department notes that the existing consent provides for the review of the Water Management Plan following any modification, which provides a sufficient process to accommodate NOW's recommendation.

The **Environment Protection Authority** (EPA) raised or noted the following matters:

- *Air quality impacts:*
 - Bulga is an operational mine and the proposal is a minor modification; and
 - Bulga is subject to the EPA's 'Dust Stop' Pollution Reduction Program (PRP), which applies to all NSW coal mines and is a useful conduit for best practice dust management.
- *Noise impacts:*
 - approval conditions should specify regular testing of sound power levels, regular noise monitoring (including for low frequency noise), and noise agreements for noise-affected private properties; and
 - Xstrata should increase the height of temperature monitoring towers from 10 metres (m) to 60 m, or alternately improve the sensitivity of impact predictions by modelling more severe (ie Class F) temperature inversions.

Agriculture NSW (a division of the Department of Primary Industries) raised or noted the following matters:

- *Upper Hunter Strategic Regional Land Use Plan* – Agriculture NSW is uncertain about the requirements of this plan in relation to the proposal;
- *Agricultural resources* – noise, dust, vibration and impacts to water resources may affect existing agricultural resources and developments;
- *Farming operations* – noise and dust impacts may cause local farm managers to move away, affecting the management of local agricultural enterprises, in turn potentially affecting the critical mass of industries to sustain agricultural services and competitive production;
- *Visual impacts* – landscapes in the Broke-Fordwich subregion are important for regional branding in certain industries, including tourism; and
- *Final land use* – revised final landforms would not change agricultural outcomes in the project area.

The **Division of Resources and Energy** within the Department of Trade and Investment, Regional Infrastructure and Services raised or noted the following matters:

- *Interaction with the Bulga Underground Mine*, particularly that subsidence impacts may change potentially resulting in:
 - oxygen infiltrating the goaf and old underground workings;
 - safety issues during open cut operations, and
 - implications for the storage of tailings in the final void.
- *Overburden dumping on the common boundary with Mt Thorley – Warkworth mine*, including that:
 - it is unclear whether an agreement over the dumping yet exists between the mines;
 - Mt Thorley – Warkworth may need to also modify its approval and assess potential noise and water impacts, etc;
 - the Mining Operations Plans for both mines would need to be modified; and
 - the mining leases and security deposits for both mines may need to be modified.

The issues raised by public agencies are addressed under section 5, below.

4.2 Public Submission

The Department received an objection from one local landowner. The objector's residence is on the Putty Road south of the village of Bulga, about 3.4 km west of the proposed extension, and is shown in the EA as receiver number 233. The objector raises issues about the potential for blasting to cause property damage, visual pollution from the proposed emplacement area, increased noise and dust impacts and the deleterious effects of mining impacts on property marketability and value. The objector asked that Xstrata purchase the property or compensate the objector for lost value.

The Department notes in respect of the objector's property, in particular:

- all blasts would continue to be designed to comply with the blast overpressure and vibration impact criteria in the existing approval. Property damage at the objector's residence would be unlikely because of these criteria;

- the spoil dump would continue to be visible from the objector's property, but not materially different in its size and visual character as a result of the modification;
- the air quality and noise predictions for the proposed modification do not show any significant impacts at the objector's residence, except for minor exceedances of the evening noise criteria (see detailed assessment in section 5);
- the proposed modification does not significantly change the predicted impacts on the objector's residence and there seems therefore to be a limited basis to claim a deleterious effect on its value; and
- the residence is listed for acquisition on request under the project approval for the adjacent Mount Thorley – Warkworth mine.

5 ASSESSMENT

The key issues arising from the Department's assessment and consultation are:

- noise and air quality impacts for members of the community;
- physical interactions between parts of the proposed modification with the Bulga Underground Mine; and
- reciprocal arrangements between Bulga and Mt Thorley – Warkworth for the common boundary overburden dump.

5.1 Noise

The noise related conditions and maximum noise criteria that appear in the existing consent conditions for the open cut operation were established in 2010 following the assessment and approval of Modification 5 (see section 1.1). The open cut had previously operated under consent conditions for noise that pre-dated the *NSW Industrial Noise Policy* (INP). Modification 5 represented a substantial tightening of noise management at Bulga.

The proposed modification re-introduces mining activity in the north-western part of the site that was not assessed for its potential noise impacts in Modification 5. Consequently, there is potential for additional noise impacts to occur northwest of the open cut operation at nearby receivers. The EA includes a further noise impact assessment (NIA) undertaken by Global Acoustics Pty Ltd.

The Department has considered the:

- noise related requirements of the existing consent;
- noise management already in place and included in the modification proposal;
- noise predictions for the modification as set out in the EA; and
- need for any further noise-related conditions for the proposed modification.

In Modification 5, Xstrata adopted a night/evening intrusive criterion of 35 dBA $L_{Aeq(15min)}$ for all sensitive receivers (the lowest INP intrusive criterion). At that time, there were 52 receivers that were predicted to experience night/evening noise above this level under worst case operational and meteorological conditions, as follows:

- *significant* exceedances (>5 dBA) were predicted at 8 receivers, which led to a consent condition making them eligible for acquisition on request. Xstrata has acquired 5 and is negotiating a 6th;
- *moderate* exceedances (3 to 5 dBA) were predicted at 6 receivers, which led to a consent condition making them eligible for noise mitigation work at Xstrata's expense. Xstrata has done work on 2 and acquired another 2, while Mt Thorley – Warkworth now owns another; and
- *marginal* exceedances (1 to 2 dBA) were predicted at a further 38 receivers.

Marginal exceedances are, for most people, not distinguishable from a noise impact that complies with the intrusive criteria. Accordingly, the existing consent does not specify any special treatment for these receivers. The consent also nominates predicted noise levels for each receiver as a maximum noise limit.

Xstrata employs a range of operational practices to minimise noise impacts. These include operating noise-attenuated equipment and locating louder equipment in shielded locations during noise-enhancing weather conditions. Xstrata also employs a range of noise monitoring practices to ensure noise impacts remain within the consent limits, including regular sound testing of equipment, and real-time noise and meteorological monitoring. The Department notes that the most recent Annual Environmental Management Report 2011 for the Complex recorded no noise compliance incidents and relatively few noise complaints. Of the total of 19 complaints, 10 related to noise emissions that were found to be within limits, a further 4 concerned noise that was attributable to the adjacent mine and another related to a strong temperature inversion.

For the proposed modification, Xstrata has committed to only use shielded dumping locations at night, and to construct 4.5 m high noise bunds adjacent to exposed haul roads where practicable. It has also agreed to investigate the use of advanced statistical analysis of the data from its noise monitoring network (such as regression modelling), which may improve noise impact forecasting and compliance monitoring industry wide.

On this basis, the NIA predicted full compliance with the existing consent's maximum noise limits under normal weather conditions for all receivers, except receiver 233 (where it predicted a 1 dBA exceedance).

However, in a worst case operational and meteorological scenario (ie at full production during night-time inversion conditions) the NIA predicts a small increase in operational noise impacts northwest of the mine. The NIA predicts the following additional exceedances of the existing intrusive criterion (ie 35 dBA):

- *moderate* exceedances (3 dBA) for 8 private receivers that previously experienced marginal exceedances (1 or 2 dBA). These properties are shown by numbered orange circles in
- **Figure 5;**
- *marginal* exceedances (2dBA) for 13 private receivers that previously expected noise exceedances of only 1 dBA; and
- *marginal* exceedances (1 to 2 dbA) for 34 private receivers that previously expected noise below the intrusive criterion (receiver 233 is in this group).

The Department considers that these predicted exceedances for the worst case operating scenario are limited in both degree and extent. They occur primarily within or south of the village of Bulga, and mostly involve marginal exceedances of the INP's intrusive criteria. The Department is satisfied that the predicted exceedances are unlikely to generally occur, but may occur during noise-enhancing weather conditions, particularly during the winter months. Nevertheless, consistent with its long term protocols for managing mining-related noise impacts, the Department recommends that the:

- 8 additional private receivers that may experience moderate exceedances of the intrusive criteria become eligible for additional noise mitigation measures at their residences at Xstrata's expense; and
- existing consent conditions are updated to include new noise limits, consistent with those predicted in the NIA.

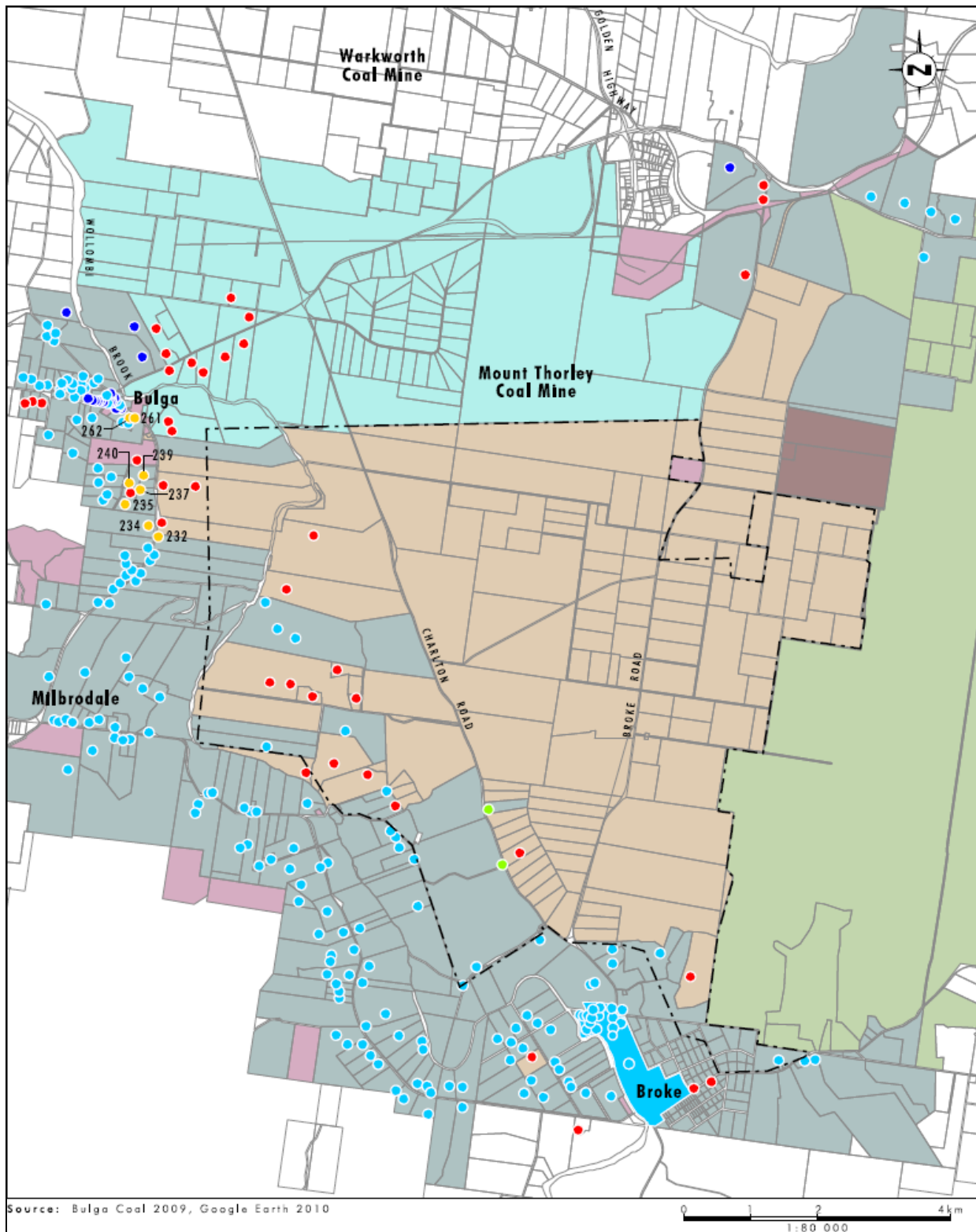
In respect of other potential noise impacts, the Department notes that:

- there are no predicted exceedances of the INP's sleep disturbance criteria;
- predicted levels of low frequency noise are unlikely to cause unacceptable impacts;
- road and rail traffic impacts are not expected to change because there is no change in employee numbers or maximum coal exports; and
- there are two minor exceedances of the INP's cumulative noise impact criteria, involving:
 - receiver 233, which is predicted to experience a marginal 2 dbA exceedance during the night period, with an estimated 87% of the exceedance attributable to Mount Thorley – Warkworth mine. This receiver has acquisition rights under the existing project approval for the Mt Thorley – Warkworth mine; and
 - receiver 261, which is predicted to experience a marginal 1 dBA exceedance during the night period, with an estimated 75% of the exceedance attributable to Mount Thorley – Warkworth mine.

The Department concludes that none of these potential impacts require amendments to the existing conditions of consent.

Finally, the EPA has raised an issue which relates to the measurement of temperature lapse rates for compliance purposes in the Hunter Valley. The Department understands that the EPA is having difficulty in accurately estimating the occurrence of temperature inversions with the existing network of 10 m high air temperature monitoring towers. It is therefore proposing increases in the height of monitoring towers to 60 m, or, as an alternative, that a different noise prediction/monitoring model is used to estimate the occurrence of temperature inversions. The Department will continue to discuss this problem and appropriate strategic solutions with the EPA. However, it is not presently convinced that the key issue for managing noise impacts associated with noise-enhancing weather conditions in the Hunter Valley is inversions (as against wind speed), or that the proposed increased tower height is generally appropriate, or appropriate in the case of the Bulga Coal Complex. In any case, should general policy move towards higher monitoring towers, this matter can be addressed in the Bulga Open Cut Optimisation Project.

The Department concludes that the overall noise impacts of the proposed modification are limited, and can be addressed by modest amendments to existing conditions of consent, which result in an additional 8 residences being listed as eligible to receive additional noise mitigation measures.



Legend

- | | |
|---|-------------------------|
| Saxonvale Colliery Holding Boundary | Bulga Coal |
| Broke Residential Area | Commercial Enterprise |
| Private Residence | Commonwealth |
| Mine Owned Residence | Crown |
| Residences with Acquisition Rights | Mount Thorley Warkworth |
| Residences with Acquisition Rights (Other Mining) | Private Freehold |
| Residences Predicted to move into Management Zone (Architectural Treatment) | |

Figure 5 – Noise receivers (ie residences and other properties), land ownership, and proposed eligibility for acquisition or noise mitigation

5.2 Air Quality

The EA included an air quality impact assessment undertaken by PAE Holmes. The assessment predicts a minor increase in dust impacts to the northwest of the mine, as follows:

- due to the project alone, 1 private receiver (number 308) is modelled to experience very minor exceedances of the criterion for 24-hour average PM₁₀ levels (50µg/m³) on 2 days per year; and
- due to all dust sources, the receiver mentioned above and a second nearby receiver (number 311) are modelled to experience 24-hour average PM₁₀ levels above the same criterion on about 9 and 6 days per year, respectively. This cumulative analysis is probability based and does not predict the degree of the exceedance on those days.

The assessment predicts 3 more private receivers to the northeast may experience annual average PM₁₀ and Total Suspended Particulate (TSP) levels above the relevant criteria (30µg/m³ and 90µg/m³), but the mine's contribution to these exceedances is minor. Most of the dust experienced by these receivers is likely to result from mines further to the north, such as Mount Thorley – Warkworth. There are no predicted exceedances of deposited dust criteria at any receiver.

Xstrata already employs a wide range of operational measures related to air quality and dust mitigation, which would continue to be applied. In addition, the Bulga Complex is subject to the EPA's 'Dust Stop' PRP, which aims to improve dust control at all open cut coal mines across NSW. In respect of the modification proposal, Xstrata has also committed to other contemporary approaches to dust management, including:

- weather forecasting with a view to modifying operations in advance of problematic weather; and
- real time dust management systems, including reactive alarms that warn of elevated dust concentrations.

Xstrata's air quality monitoring shows the existing operation has generally complied with air quality criteria. The mine generates relatively few air quality complaints. In the 5 years to 2010, it recorded just 6 dust complaints, 2 odour complaints and 6 blast fume complaints.

The Department recognises the conservative nature of air impact prediction methodology and considers that the predicted exceedances are low in number and relatively unlikely to occur. In practice, Xstrata has demonstrated that it can actively manage its operation to minimise air quality problems. It is also a participant in the EPA's Dust Stop PRP, and it has committed to contemporary measures to monitor and prevent dust emissions. The Department accepts that the predicted air quality impacts are minor and can be readily managed under the air quality management conditions in the existing consent.

5.3 Other issues

The Department's consideration of other issues is in Table 1.

Table 1 – Assessment of other issues

Issue	Impact and Consideration	Recommendation
<i>Interactions with Bulga Underground Mine</i>	<ul style="list-style-type: none"> • DRE raised a number of concerns over potential interactions of the remining with the operations of the Bulga Underground Mine. Xstrata reported in its response to submissions that the proposed extension to the open cut western limit does not interact with the existing Whybrow underground mine workings in the Beltana No 1 mine or the associated subsidence impact area. However, the area of proposed remining does overlay a separate approved underground mine layout, Bulga's proposed (but not constructed) Blakefield North mine. • The Department notes that a separate modification application relating to the consent for the Bulga Underground Mine (DA 376-8-2003 MOD 5) is currently under assessment. This application proposes changes to the longwall configuration in the Blakefield North mine. Part of the re-configuration results from the proposed extension to the open cut western limit and proposed realignment of the Blakefield North access slot considered under this report. Xstrata has indicated that the underground layouts for the Woodlands Hill and Glen Munro seams would be modified in the future to ensure that they remain outside the open cut limits. • The Department concludes that there would be no adverse interactions between the proposed open cut remining and existing and proposed underground mining operations that are not expected to be thoroughly and adequately addressed through existing and proposed approval processes. 	No additional conditions recommended.

Issue	Impact and Consideration	Recommendation
<i>Interactions with Mt Thorley – Warkworth</i>	<ul style="list-style-type: none"> The Department notes that a previous consent (DA 38-3-2005) provided for emplacement of overburden from Bulga in the Mt Thorley emplacement area, immediately north of Bulga's northern boundary. Work under this consent was completed as intended, and it lapsed in 2011. The new overburden dumping location on the northern boundary would largely fill in the artificial valley between the emplacement areas on the two mines. The proposal represents an example of co-operation between neighbouring mining companies which reduces the overall footprint of spoil emplacements and improves environmental outcomes. The two mining companies would need to present evidence of an agreement to DRE to enable it to consider any necessary changes to the mining leases, Mining Operations Plans and security deposits for both mines. The Mt Thorley – Warkworth mine may also need to consider whether it also needs to modify its existing project approval to receive and emplace overburden material from Bulga. 	No additional conditions recommended.
<i>Land use and resources</i>	<ul style="list-style-type: none"> Agriculture NSW raised several matters concerning the impact of the proposed modification on adjoining agricultural resources and land uses. The proposed modification is a brown-field extension of the mine, within an existing mining lease and primarily on previously disturbed land. Therefore, it would not be subject to the Gateway process under the Upper Hunter Strategic Regional Land Use Plan. However, the open cut operation is within 2 km of Biophysical Strategic Agricultural Land and Viticulture Critical Industry Cluster land. The Department considers that the predicted impacts to water resources are little different in scope and magnitude to those already existing at the Bulga Complex. Consequently, the Department considers that additional impacts to agricultural productivity on nearby land would be negligible. The Department notes that amenity impacts to residential receivers from the proposed modification are generally minor. The Department considers that the concern that local farm managers may move away because of amenity impacts, depleting the local agricultural skills base, is unfounded. 	No additional conditions recommended.
<i>Final Landform and Rehabilitation</i>	<ul style="list-style-type: none"> While the EA contains a series of progressive mine plans and a proposed indicative final landform, the Department notes that these predictions will be overtaken if the Bulga Open Cut Optimisation Project is approved. Detailed landform treatments and rehabilitation are subject to Xstrata's final landform and rehabilitation management plan, which would need to be reviewed for the proposed modification as required by the existing consent conditions. The modification does not change the rehabilitation objectives for the mine. 	No additional conditions recommended.
<i>Ecology</i>	<ul style="list-style-type: none"> The proposed modification is generally on previously mined and rehabilitated land, except for a small additional area of 1.89 hectares (ha) of disturbance in the far northeast of the northern extension, within which there is: <ul style="list-style-type: none"> 1.2 ha of <i>Central Hunter Grey Box – Ironbark</i> derived native grassland, which is an Endangered Ecological Community (EEC); 0.65 ha of <i>Central Hunter Grey Box – Ironbark</i> woodland; and 0.04 of <i>Bulloak</i> forest. Xstrata has proposed that it would add an offset for this proposal to offsets for other aspects of the mine. The Department and the OEH consider this an appropriate approach, given the minor amount of additional disturbance. 	Recommended condition requires Xstrata to provide an appropriate offset for the clearing of 1.2 ha of EEC, by December 2014. This would allow incorporation of this requirement within any larger offset required as a result of the Bulga Open Cut Optimisation Project.
<i>Surface Water</i>	<ul style="list-style-type: none"> The proposed modification largely relates to the existing approved mine disturbance area. The 1.89 ha area of additional disturbance can be readily incorporated into Xstrata's existing mine water management system. There is a slight reduction in the final void catchment size. However, the northern extension is also proposed to mine through an existing in-pit water storage located in the base of the Whybrow Pit, known as the Whybrow Dam. This storage presently holds some 140 megalitres of mine water. Xstrata has 	No additional conditions recommended.

Issue	Impact and Consideration	Recommendation
	<p>confirmed that this storage would be dewatered prior to being mined through, and that this mine water would be readily handled through other available storages in the Complex. Standard measures would be employed to control runoff from the Whybrow Pit into the new deeper mining slot.</p> <ul style="list-style-type: none"> The Department finds these measures to be appropriate. However, the site water balance and Water Management Plan would need to be updated to reflect the mining extension, changed runoff characteristics and the proposed final landform, as required by the existing consent conditions. 	
<i>Ground Water</i>	<ul style="list-style-type: none"> The EA included a groundwater impact assessment undertaken by Mackie Environmental Research. The predicted depressurisation in the seams to be mined resulting from the modification is virtually identical to that under the approved operation. It is also dominated by the depressurisation resulting from the approved underground mine. Xstrata already holds adequate groundwater licences. The Department and NOW are satisfied the proposed modification is unlikely to result in a reduction in base flows in either Wollombi Brook or Monkey Place Creek. 	No additional conditions recommended.
<i>Visual impacts</i>	<ul style="list-style-type: none"> The EA included a radial view analysis comparing the approved mine plan with the proposed mine plan. The analysis showed little difference in the vantage points surrounding the mine from which it can be seen. The changes to the final landform essentially change the Whybrow emplacement area adjacent to Charlton Road, introducing more of a final void into views from the west. Despite this change, the visual character of the site post-mining is materially the same as the visual character already approved. Xstrata would continue to manage night time lighting impacts. The Department concludes that the visual impacts of the modification are acceptable both generally, and specifically in regard to the objector's concerns, and those relating landscape based regional branding for some tourist based industries, as raised by Agriculture NSW. 	No additional conditions recommended.
<i>Blasting</i>	<ul style="list-style-type: none"> Blasting is not required to extract the existing rehabilitated mine spoil in the Whybrow Pit, until the floor of the pit is reached and stripping of the Redbank interburden commences. Xstrata would continue to design such blasts to meet the blast vibration and overpressure limits specified in the existing consent. Blasting would continue to be managed and monitored according to the existing Blast and Vibration Management Plan. 	No additional conditions recommended.

6 RECOMMENDED CONDITIONS

The Department has drafted recommended conditions for the modification to address the recommendations in Section 5 above (see Appendix A). The recommended conditions are reasonably limited in scope. While the Bulga Open Cut consent has been modified on 6 previous occasions, and is somewhat out-of-date when compared with contemporary open cut consents, the Department considers that there is insufficient value for Government agencies and the mine to fully update the consent at this time, given that the revised consent is only likely to be in existence for some 6 months or so, until overtaken by a new consent associated with the Bulga Open Cut Optimisation Project.

Xstrata has reviewed and accepted these conditions.

7 CONCLUSION

The Department has assessed the modification application in accordance with the relevant requirements of the EP&A Act, including the objectives of the Act and the principles of ecologically sustainable development.

There are socio-economic benefits that would accrue by extending operations in the open cut within the time limits of the existing consent. These benefits include continued employment for mine workers, and improving return on capital already invested in the mine, especially, although not exclusively in view of the Bulga Open Cut Optimisation Project, which is currently under the Department's assessment.

While there are potential air quality and noise impacts, the Department notes that predicted exceedances of acceptable limits are minor. Xstrata would continue to adjust its operations, and to deploy noise and dust mitigation measures to minimise resulting impacts. In addition, Xstrata has agreed to investigate new ways of statistically analysing data from its noise monitoring network to improve impact prediction and compliance monitoring, and has committed to develop real-time dust monitoring technology to improve dust management and compliance monitoring. These initiatives are likely to have industry-wide benefits.

The existing consent conditions are extensive and, with some minor changes, would adequately cover the impacts associated with the proposed modification. In particular, the Department has recommended changes to the noise compliance conditions to reflect the updated noise predictions, and an additional condition that requires land clearing to be offset with a suitable biodiversity offset.

On balance, the Department considers that proposed modification is in the public interest and should be approved, subject to conditions.

8 RECOMMENDATION

It is RECOMMENDED that the Director Mining and Industry Projects, as delegate of the Minister:

- consider the findings and recommendations of this report;
- determine that the proposed modification falls within the scope of section 75W of the EP&A Act;
- approve the application under section 75W, subject to conditions; and
- sign the notice of modification in Appendix A.

Howard Reed

Howard Reed
Manager Mining Projects

15-3-13

David Kitto 15/3/13

David Kitto
Director Mining and Industry Projects

APPENDIX A – NOTICE OF MODIFICATION

APPENDIX B – ENVIRONMENTAL ASSESSMENT

APPENDIX C – SUBMISSIONS

APPENDIX D – XSTRATA’S RESPONSE TO SUBMISSIONS