The majority of lighting utilised at a mine site is associated with the CHPP, workshops and load out infrastructure, all of which are located at the existing Drayton Mine. These sources are situated over 14 km from the horse studs and remain shielded by existing topography and vegetation. In this regard, light generated from the sources at Drayton Mine will not be visible from Coolmore Stud and Woodlands Stud and as such will not impact on the breeding cycle of their horses.

Lighting impacts within the Drayton South operational area will predominantly be caused by lights fitted to mobile equipment operating outside of active mining areas. In most cases, direct light effects will be limited as a result of existing topography and vegetation. However, there may be intermittent direct light effects due to truck movements associated with the construction of the Houston visual bund. Any such direct light impacts are considered to be negligible when compared to those that would already be experienced by trucks and other traffic travelling on the Golden Highway, which is located between the Project and Coolmore Stud.

Where practical, other operational lighting at Drayton South, such as lighting plants, will be hooded or directed away from receivers to reduce impacts. Given that the nature of any direct lighting generated in the Drayton South operational area that is visible at receivers to the south will be intermittent (significantly less than 16 h of continuous exposure), the Project is not anticipated to affect the breeding cycle of horses on Coolmore Stud or Woodlands Stud.

4.7 VISUAL

4.7.1 Assessment Approach

This section responds to the submissions raised by stakeholders regarding the adequacy of the visual impact assessment (see Appendix I of the EA). It provides an overview of the assessment that has been undertaken and how it addresses the Director-General's EARs for the Project. Further it describes the way in which the visual assessment locations have been selected and the accuracy of the three dimensional computer model and photomontages.

Submission: SIG12, SIG13, SIG14, SIG15 and SIG16

A visual impact assessment was undertaken by JVP Visual Planning and Design and is provided in Appendix I of the EA. The purpose of the assessment was to define the character of the surrounding landscape, assess the visual impacts of the Project and recommend measures to mitigate and manage these impacts.

The visual impact assessment was undertaken in accordance with the relevant Director-General's EARs for the Project, including:

- Analysis of the costs and benefits of potential alternative locations for the proposed Houston visual bund, and detailed specifications and construction timeframes for the preferred alternative; and
- Assessment of visual impacts on the thoroughbred horse breeding industry, residents, tourists and other road users.

On 30 April 2012, a supplementary requirement was issued by the Director-General under section 75F(3) of the EP&A Act requiring the preparation of an agricultural impact statement that includes a specific focused assessment of the impacts of the Project on SAL, having regard to the gateway criteria in the SRLUP. Accordingly, the visual impact assessment included an assessment as to whether the Project would lead to significant impacts on viticulture or equine CICs through a "*loss of scenic and landscape values*" as is required by the gateway criteria in the SRLUP. In this regard, the findings from the visual impact assessment were used to inform the agricultural impact statement for the Project (see Appendix R of the EA).

Prior to allowing a development proposal to proceed to public exhibition, DP&I first reviews the proponent's EA to ensure it adequately addresses all of the necessary requirements as outlined in the Director-General's EARs for the Project. The visual impact assessment prepared for the EA was deemed adequate by DP&I for public exhibition.

Selection of Representative Viewing Locations

A number of submissions questioned how the viewing locations were selected for the visual impact assessment and whether they are considered to be representative. Obviously there are a range of locations within the vicinity of the Project that will be visually impacted. For the purpose of the visual impact assessment (see Appendix I of the EA), a number of sites within key sectors of the visual study area were selected as representative viewing locations. These locations were selected as part of an extensive consultation process with key stakeholders, including Coolmore Australia and Darley Australia and their respective specialist consultants. This included a field assessment and a detailed analysis of aerial photography and topographic plans to determine the likely visibility of the Project. Whilst there will be some variation at specific viewing locations, the overall visual impact at the locations selected for the EA are representative for the majority of views experienced.

Three Dimensional Computer Model and Photomontage Development

A number of submissions raised concern with regard to how the three dimensional computer model was developed and whether the photomontages did in fact accurately represent the potential future views of the Project.

As described in the visual impact assessment (see Appendix I of the EA), the visual effect of the Project on representative viewing locations was determined by the development of a number of photomontages. The assessment of visual effect takes into account the significant views of the Project expected to be seen from these locations.

Photographs of the Project were taken at standing eye level from the representative viewing locations. In the case of the photographs on Coolmore Stud, these were taken in coordination with their visual specialist. Each of these photograph locations were recorded by a registered surveyor using a Global Positioning System. The photography provides a realistic representation of the site landscape and how it is seen from each viewing location in response to light and atmospheric conditions. Contrary to suggestions in a number of submissions received, the photographs and subsequent photomontages have not been softened, distorted or altered in any way.

Three dimensional computer models of the Project at representative stages of progression of mining were created from digital surface topography and detailed mine plans. The three dimensional model has been aligned to each viewing location and multiple ground features from the DTM and orthorectified aerial photograph, both of which were created with their own survey control. The photographs of the Project and its landscape setting were imported into the model for each viewing location. Future visible components of the Project were determined taking into account any existing foreground screening from topography or vegetation. Realistic colours and textures were applied to the visible Project components in consideration of viewing distances. The end result is an accurate and credible photomontage of the likely future view of the Project from the selected representative viewing locations.

4.7.2 Houston Visual Bund

This section responds to the submissions raised by stakeholders regarding the requirement to establish the Houston visual bund.

Submission: RA2, SIG12, SIG13, SIG15, P13 and P30

One of Anglo American's key objectives when developing the mine plan for the Project was to reduce the visual impacts on sensitive receivers located to the immediate south, including Coolmore Australia, Darley Australia, Arrowfield Estate and the village of Jerrys Plains.

The visual impact assessment (see Appendix I of the EA) has determined that views to the Project are largely screened from the surrounding areas due to existing natural topography, remnant vegetation and the establishment of tree screening. The exception to this is the views that will be available through an existing valley to the south of the Houston and Whynot mining areas.

To alleviate potential long term views of the Project, a visual bund will be constructed. Engineering and design works have been undertaken on various visual bund options as part of the consultation process and ongoing working group participation with neighbouring stakeholders. From such efforts, the preferred location and design of the Houston visual bund (Option 3) was presented in the EA for the Project. It is noted that while all best endeavours were taken to design a visual bund that was satisfactory to all stakeholders this was not able to be achieved with Coolmore Australia and Darley Australia, in particular declaring that in any case they will still oppose the Project and its associated visual bund.

As described in Section 4.7 of the EA, the Houston visual bund will involve an eight stage construction program for a period of approximately 16 months. It is required to be developed in Year 3 in order to prevent future views that would otherwise be available to the Whynot mining area.

Once constructed, the Houston visual bund has been designed to align with the existing topography and landscape. The visual bund will be progressively covered with available topsoil during its staged construction and rehabilitated with pasture grass and/or sterile cover crops to minimise exposed areas. Anglo American's commitment for progressive rehabilitation of the visual bund has been shown in the photomontages provided in the EA. By Year 5 it is anticipated that the rehabilitation of the visual bund will be complete with tree

plantings composed of native species established. Further details with regard to the rehabilitation of the visual bund are outlined within the rehabilitation strategy for the Project (see **Section 4.17** and **Appendix J**). Once established, the visual bund will integrate with the existing ridgeline, restore visual amenity and assist in shielding views to the Project over the remaining operational years.

Alternative Visual Bunds

As required by the Director-Generals EARs, considerable engineering and design works have been undertaken on three alternative visual bund designs as part of the Project planning phase. This included an evaluation of the effectiveness of each bund option to shield the operations from sensitive receivers and an analysis of the visual impacts that would likely be experienced during construction. This was undertaken as part of the extensive consultation process and working group forums with neighbouring stakeholders, in particularly Coolmore Australia.

The preferred location and design of the visual bund was then developed with consideration of the feedback received from neighbouring stakeholders, which included a range of key design parameters and objectives. These included that the visual bund must be:

- Designed so that once constructed it would shield views to mining operations from the south;
- Located as far as feasibly possible up in the existing valley;
- Constructed in as short a timeframe as possible; and
- Established in a staged lift approach and progressively rehabilitated to minimise views to exposed areas during its construction.

For Anglo American, an important consideration was that the visual bund option selected provides sufficient strike length for the efficient and safe operation of a dragline and associated equipment within the Houston mining area.

An analysis of the three alternative visual bunds that were considered for the Project was included in Section 4.3 of Appendix I of the EA and within Sections 4.16.6 and 8.6.4 of the EA. Option 3 was selected as the preferred alternative for the Project as it best satisfies the above stakeholder design parameters and objectives while providing a sufficient strike length for the efficient and safe operation of a dragline in the Houston mining area.

Coolmore (Option 4) Visual Bund

As part of their submission on the EA, Coolmore Australia provided a design for a fourth alternative visual bund. The Coolmore (Option 4) visual bund has been considered and assessed as part of this RTS with the findings provided below.

As part of their review of the EA, Coolmore Australia engaged a specialist mining consultant to undertake a detailed examination of the Houston visual bund in order to attempt to develop a more suitable option. The Coolmore (Option 4) visual bund as proposed in their submission has been designed in an attempt to achieve the following criteria:

- Reduced size of the external foot print of the bund;

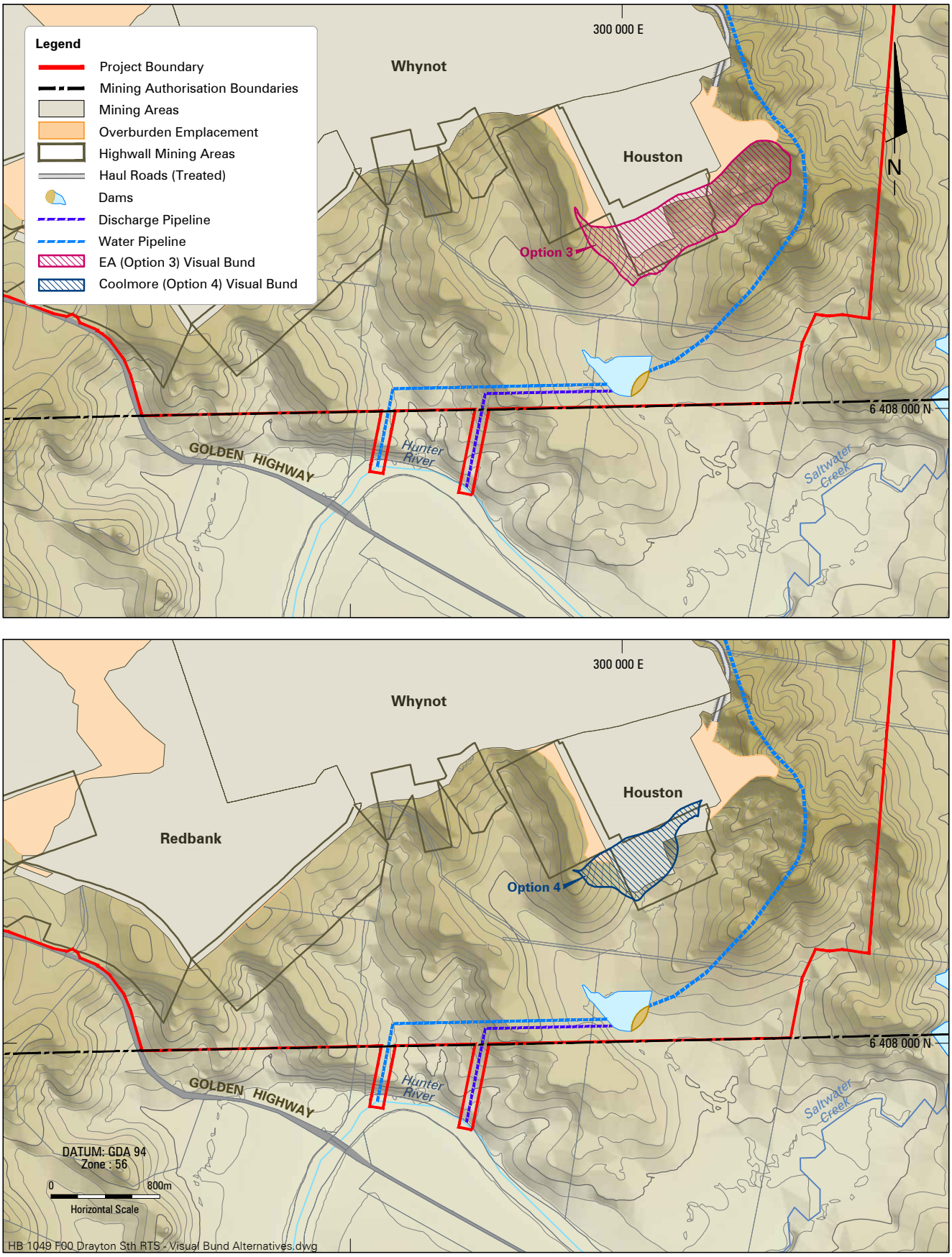
- Reduced volume of material required to establish the bund;
- Reduced time required to construct the bund;
- Reduced environmental impacts as a result of dust and noise generation during its construction;
- Located further from Coolmore Stud; and
- Enable a sufficient strike length for the efficient and safe operation of a dragline and associated equipment within the Houston mining area.

Figure 19 shows a comparison of the EA (Option 3) visual bund with the Coolmore (Option 4) visual bund.

To ascertain the effectiveness of the Coolmore (Option 4) visual bund, the plans as provided in their submission were incorporated into the existing three dimensional computer models for the Project. This was then used to develop a range of photomontages from four critical viewing locations relevant to Coolmore Stud including:

- DS03 Jerrys Plains – Golden Highway;
- DS05 Coolmore Stud – Ellerslie Residences;
- DS06 Coolmore Stud – Oak Range Road (Top); and
- DS08 Coolmore Stud – Batty Hill.

The photomontages as developed for each of these viewing locations using the Coolmore (Option 4) visual bund are shown on **Figure 20** to **Figure 27** with a relevant analysis of the predicted visual impacts provided below.



DRAYTON SOUTH COAL PROJECT
RESPONSE TO SUBMISSIONS

Houston Visual Bund Alternatives

FIGURE 19

DS03 Jerrys Plains – Golden Highway

As shown on **Figure 20** and **Figure 21**, from this location the Coolmore (Option 4) visual bund is effective at screening all views to the Project. When compared to the visual bund presented in the EA (Option 3) it is noticeably smaller and does not extend as far to the east.

DS05 Coolmore Stud – Ellerslie Residences

As shown on **Figure 22** and **Figure 23**, from this location the Coolmore (Option 4) visual bund is generally effective at screening views to the Project. When compared to the visual bund presented in the EA (Option 3) it is noticeably smaller and does not extend as high or as far to the east. However, as can be seen when comparing the photomontages for Year 10 and Year 27, there will be limited views to mining through a distant ridge over the eastern lip of the visual bund (in the area where it has been reduced). This will generate moderate to high visual impacts for a period while this area is mined through. It is noted that there will be no views to the OEAs associated with the Project as these are still able to be screened by the existing topography, vegetation and the visual bund.

DS06 Coolmore Stud – Oak Range Road (Top)

As shown on **Figure 24** and **Figure 25**, from this location the Coolmore (Option 4) visual bund will screen most views to the Project. However, it is apparent that areas of the highwall associated with the Houston mining area will be visible for most years of the Project from this location as the Coolmore (Option 4) visual bund does not adequately shield mining areas in the south-eastern portion of the mine. Distant views will also be available to mining of a distant ridge over the lip of the visual bund. This would generate moderate to high visual impacts at this location. It is noted that there will be no views to the OEAs associated with the Project as these are still able to be screened by the existing topography, vegetation and the visual bund.

DS08 Coolmore Stud – Batty Hill

As shown on **Figure 26** and **Figure 27**, from this location the Coolmore (Option 4) visual bund will screen most views to the Project. However it is apparent that an area of the highwall associated with the Houston mining area will be visible for most years of the Project from this location as the Coolmore (Option 4) visual bund does not adequately shield mining areas in the south-eastern portion of the mine. From this location, these views will be quite distant. As with the visual bund presented in the EA (Option 3) no other views would be available from this location as the Project is able to be screened by the existing topography and vegetation.

Following due consideration and assessment of the Coolmore (Option 4) visual bund it can be confirmed that this option does in fact offer the following advantages when compared to the visual bund presented in the EA (Option 3):

- Reduced size of the external footprint (with considerable reduction in extent of the footprint to the east);
- Reduced volume of material required to establish the bund (6.2 Mlcm compared to 16.6 Mlcm);
- Reduced time required to construct the bund (eight months compared to 16 months);
- Reduced environmental impacts as a result of dust and noise generation (relative to the reduction in volume of material and time taken to build);
- Slight increased distance from Coolmore Stud; and
- Enables a sufficient strike length for the efficient and safe operation of a dragline and associated equipment within the Houston mining area.

The disadvantages of the Coolmore (Option 4) visual bund with regard to potential visual impacts are that in some of the areas where it has been made smaller (specifically to the east) there are areas of the highwall associated with the Houston mining area that will be visible from certain locations. Distant views will also be available from some areas to mining activities over the lip of the visual bund (in areas where it has been designed to be lower). It is noted that there will be no views to the OEAs associated with the Project as these are still able to be screened by the existing topography, vegetation and the visual bund.

Based on the above review of the Coolmore (Option 4) visual bund, it is apparent that there are a range of advantages and disadvantages with the alternative design as provided. Anglo American is willing to commit to build the Coolmore (Option 4) visual bund if it were required to. However, given that this option does not fulfill one of the key design parameters as provided by Coolmore Australia during the consultation process, being that *"the bund must be designed so that once constructed it would shield views to mining operations from the south*" it would appear that the visual bund as presented in the EA (Option 3) best meets this criterion.

1049 Drayton Sth RTS - Photomontages - p01

DRAYTON SOUTH COAL PROJECT
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AngloAmerican | Hansen Bailey ENVIRONMENTAL CONSULTANTS

Photomontage with Coolmore (Option 4) Visual Bund
Location DS03 – Jerrys Plains, Golden Highway (Year 3A and 3B)

FIGURE 20

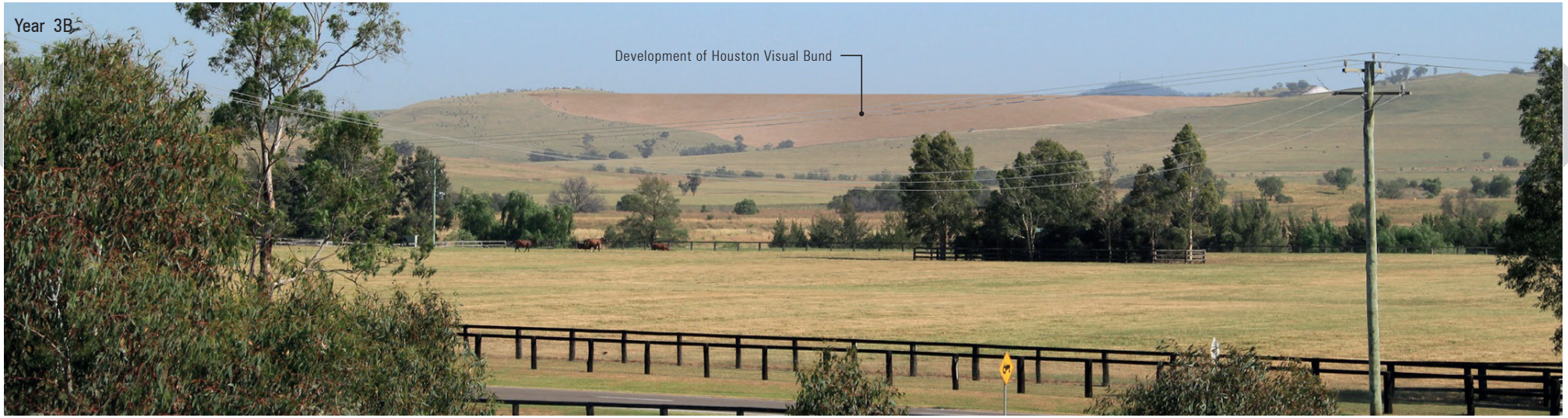
1049 Drayton Sth RTS - Photomontages - p02

DRAYTON SOUTH COAL PROJECT
RESPONSE TO SUBMISSIONS

AngloAmerican | Hansen Bailey ENVIRONMENTAL CONSULTANTS

Photomontage with Coolmore (Option 4) Visual Bund
Location DS03 – Jerrys Plains, Golden Highway (Year 10 and 27)

FIGURE 21



1049 Drayton Sth RTS - Photomontages - p07

DRAYTON SOUTH COAL PROJECT
RESPONSE TO SUBMISSIONS

AngloAmerican | Hansen Bailey ENVIRONMENTAL CONSULTANTS

Photomontage with Coolmore (Option 4) Visual Bund
Location DS05 – Coolmore Stud, Ellerslie Residence (Year 3A and 3B)

FIGURE 22

1049 Drayton Sth RTS - Photomontages - p08

DRAYTON SOUTH COAL PROJECT
RESPONSE TO SUBMISSIONS

AngloAmerican | Hansen Bailey ENVIRONMENTAL CONSULTANTS

Photomontage with Coolmore (Option 4) Visual Bund
Location DS05 – Coolmore Stud, Ellerslie Residence (Year 10 and 27)

FIGURE 23

1049 Drayton Sth RTS - Photomontages - p03

DRAYTON SOUTH COAL PROJECT
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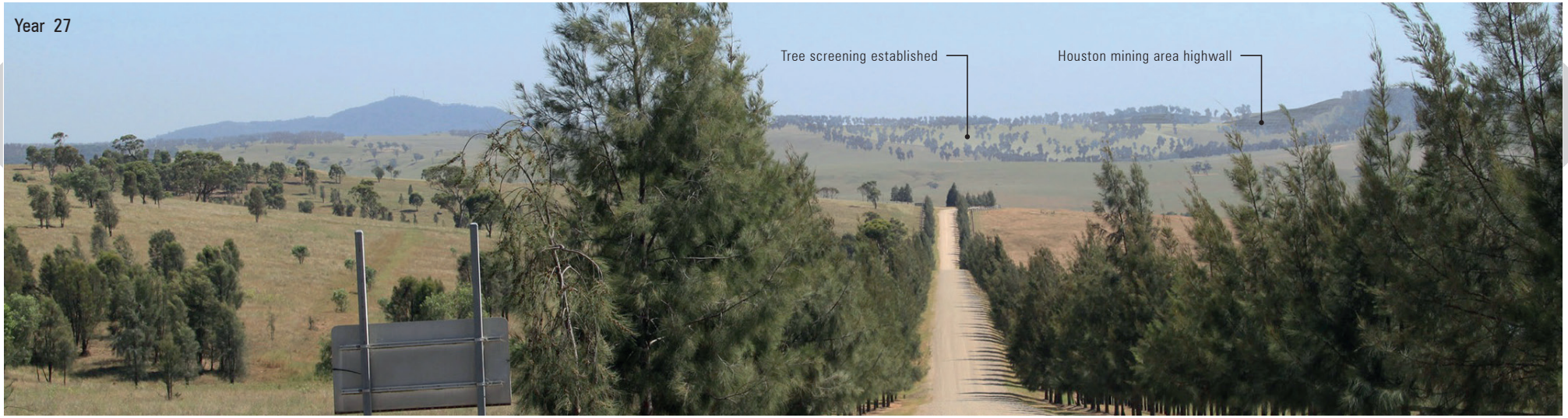
AngloAmerican | Hansen Bailey ENVIRONMENTAL CONSULTANTS

Photomontage with Coolmore (Option 4) Visual Bund
Location DS06 – Coolmore Stud, Oak Range Road (Top) (Year 3A and 3B)

FIGURE 24



1049 Drayton Sth RTS - Photomontages - p04

DRAYTON SOUTH COAL PROJECT
RESPONSE TO SUBMISSIONS

AngloAmerican | Hansen Bailey ENVIRONMENTAL CONSULTANTS

Photomontage with Coolmore (Option 4) Visual Bund
Location DS06 – Coolmore Stud, Oak Range Road (Top) (Year 10 and 27)

FIGURE 25

Year 3A

NW

SE

Year 3B

NW

SE

1049 Drayton Sth RTS - Photomontages - p05

DRAYTON SOUTH COAL PROJECT
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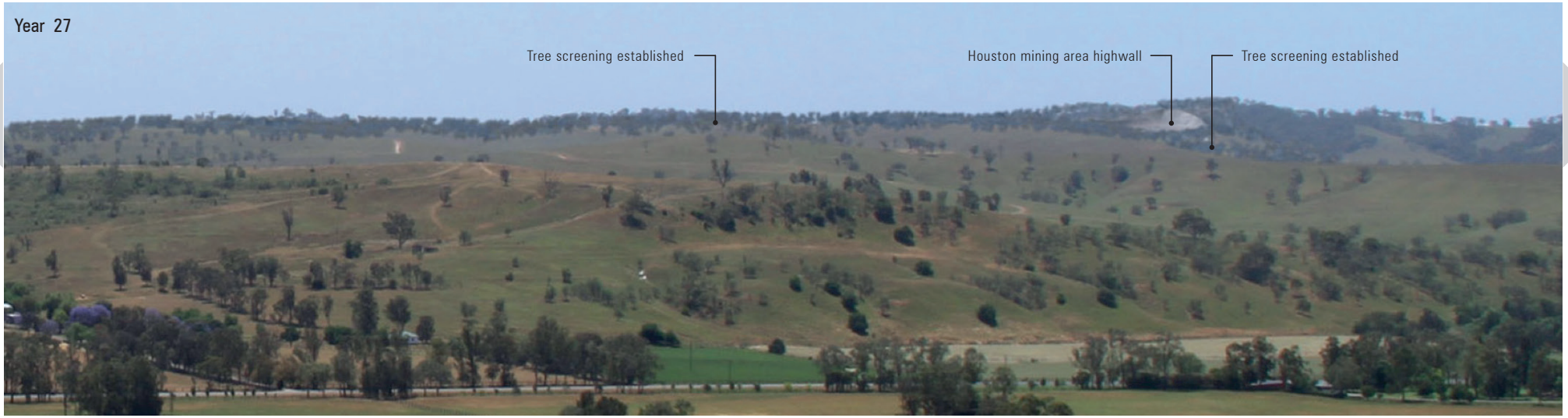
AngloAmerican | Hansen Bailey ENVIRONMENTAL CONSULTANTS

Photomontage with Coolmore (Option 4) Visual Bund
Location DS08 – Coolmore Stud, Batty Hill (Year 3A and 3B)

FIGURE 26



1049 Drayton Sth RTS - Photomontages - p06

DRAYTON SOUTH COAL PROJECT
RESPONSE TO SUBMISSIONS

AngloAmerican | Hansen Bailey ENVIRONMENTAL CONSULTANTS

Photomontage with Coolmore (Option 4) Visual Bund
Location DS08 – Coolmore Stud, Batty Hill (Year 10 and 27)

FIGURE 27

4.7.3 Analysis of Sensitivity

This section responds to the submissions raised by stakeholders regarding the sensitivity analysis of landscapes and receivers as part of the visual impact assessment (see Appendix I of the EA).

Submission: RA2, SIG13, SIG14, SIG15 and SIG16

As described in the visual impact assessment, visual sensitivity is a measure of how critically a change to the existing landscape is viewed by people from different land use areas in the vicinity of a project. In this regard, residential, tourist and recreation areas, and in the case of the Project, neighbouring horse studs and winery, will have a higher visual sensitivity than other land use areas, including industrial, agricultural or transport corridors, given that the scenic amenity values of the surrounding landscape are utilised as part of their business image.

Accordingly, the importance of scenic amenity and landscape values to the neighbouring thoroughbred horse breeding operations of Coolmore Stud and Woodlands Stud and the adjacent Arrowfield Estate have long been acknowledged by Anglo American and have been a key element of consideration throughout the Project design phase and EA. This has been reflected in the material concessions and commitments that have been made by Anglo American as part of the design of the mine plan for the Project (see Section 4.16 of the EA). In this regard, the mine plan as developed seeks to minimise, as far as practical, the visibility of the Project from these neighbouring properties. This involves maintaining the southern ridgeline and ensuring that all OEAs are developed and shaped so as to remain shielded behind this ridgeline from receivers in the south. Further details of the extensive measures that have been incorporated and taken on board with regard to the Project's design and proposed mitigation measures are provided in **Section 4.7.4**.

Visual sensitivity is significantly reduced when existing elements of a landscape (such as topography or foreground vegetation) block or obscure the visibility of Project elements. This is the case at locations such as Arrowfield Estate (particularly for the existing vineyard area, winery, cellar door and residences), much of Woodlands Stud (excluding the high points associated with Trig Hill) and various other locations surrounding the Project. Accordingly, where there are no available views to the Project the sensitivity is assigned as low.

An example of the effectiveness of the existing topography to shield views to the Project is illustrated in **Figure 28**, which is a photomontage taken from the Arrowfield Estate cellar door car park. Existing topography is effective in shielding views from the majority of Arrowfield Estate with the exception of an area on the highest point of the north-western ridgeline at the back of the property. It is understood that this area may form part of United Pastoral's plans to develop the Arrowfield Estate site. If these plans were to progress then additional mitigation measures could be developed and implemented at this location as outlined in **Section 4.7.4**.

1049 Drayton Sth RTS - Photomontages - p09

DRAYTON SOUTH COAL PROJECT
RESPONSE TO SUBMISSIONS

AngloAmerican | Hansen Bailey ENVIRONMENTAL CONSULTANTS

Photomontage Location DS18
Arrowfield Estate, Cellar Door Car Park (Existing and Year 27)

FIGURE 28

Mitigation to Reduce Visual Sensitivity

The sensitivity of viewing locations can be reduced by carrying out treatments to shield and/or minimise visibility of the Project. Due to the scale of mining components, such as the OEAs, screening is often most effective at or close to the point of viewing. Such screening treatments can also be used to redirect views to areas not affected by mining activities as well as generally enhancing the landscape at the viewing point.

Anglo American is committed to undertaking additional visual impact mitigation at specific sensitive viewing locations via offsite visual treatments, such as establishing tree screens and/or plantings at the viewer's location to reduce visibility. Mitigation strategies will be developed in consultation with the relevant stakeholders.

4.7.4 Project Design, Mitigation and Management

This section responds to the submissions raised by stakeholders regarding the importance of the visual quality of the landscape to thoroughbred horse breeding operations and hence the requirement to ensure this is maintained during the development of the Project. It also outlines the extensive stakeholder consultation process that has been undertaken in order to fully understand this concern and the measures that have been incorporated and taken on board with regard to the Project's design.

Submission: RA2, SIG12, SIG13, SIG15, P13 and P30

As described within Section 8.6.5 of the EA, numerous mitigation measures have been incorporated into the design and operating plans for the Project that will reduce the visual effect and mitigate the visual impact on sensitive viewing locations, including those from the Coolmore Stud and Woodlands Stud, Arrowfield Estate and along the Golden Highway. These measures include:

- Mine planning and design to ensure that the southern ridgeline is maintained and that all OEAs are developed and shaped so as to remain shielded behind this ridgeline from receivers in the southern sector;
- Development of the Houston visual bund to alleviate potential long term views of the Project. The Houston visual bund has been designed to be constructed as quickly as possible in a staged lift configuration so that each main stage lift is able to be progressively covered with available topsoil and rehabilitated with pasture grass to minimise exposed areas. Tree plantings, composed of native species, will be established on the visual bund to restore visual amenity and compatibility with surrounding woodland landscapes;
- Tree screens have been established along the Golden Highway and will be planted along the ridgeline adjoining the Houston visual bund and the Edderton Road realignment to minimise views of the Project from various vantage points. These tree screens will be planted prior to and during the construction phase to allow for substantial growth and to maximise the opportunity for establishment;
- Detail planting plans will be prepared to clearly illustrate areas and the character of planting on all rehabilitation areas, including the visual bund;

- Progressive rehabilitation of OEAs and disturbed areas in accordance with the objectives that are set out in the Project's rehabilitation strategy (see **Section 4.17**);
- Use of compatible tones for building and cladding colours. This will include tonal variations of existing colours in the surrounding landscape;
- Use of low lux lamps and direction of fixed lights toward the ground, where practical;
- Implementation of work procedures related to the use of mobile lighting plants to avoid adverse off site lighting impacts; and
- Use of real-time monitoring and proactive management of operations, with regard to dust management will allow effective modifications to mining activities so that potential visible dust impacts are unlikely to occur.

The mitigation measures listed above will reduce the visual effect of Project components by reducing visibility for sensitive receivers and reducing the level of contrast with the surroundings.

Tree Screens

Section 4 of the visual impact assessment (Appendix I of the EA) provides the extent of the tree screen plantings along the ridgeline, Golden Highway and the Edderton Road realignment on the stage mine plans.

Tree screens have already been established along a portion of the Golden Highway. Tree screens will also be established along the ridgeline and the Edderton Road realignment prior to (commencing indicatively Quarter 3, 2013) and during the construction phase, which will be undertaken over a 29 month period. Pre-construction planting will involve the establishment of tube stock seedlings comprising of native species. Additional tube stock seedlings will be subsequently planted to supplement canopy species and other perennial species, thereby increasing vegetation density and diversity. The use of local provenance native shrubs, trees and groundcover plants will assist in maintaining genetic health of planting stock.

To further optimise the success of tree screen establishment, key learnings from the scientific trial at Drayton Mine for the establishment of native woodland will be adopted. As the trial progresses the following variables will be assessed:

- Merits of tube stock versus direct seeding;
- Suitability of a wide range of relevant local native trees, shrubs and ground covers; and
- Benefits of mixing and applying seed with fertiliser (Granulock 15) versus Kitty Litter (an inert seed bulking agent).

From the trial to date, the following strategies that can be adopted to assist in the establishment of tree screens include:

- Balanced use of pasture species and sterile cover crops to enhance organic soil content prior to sowing/planting native woodland species; and

- Regular maintenance application of fertilizer (with high levels of phosphorus and nitrogen) to enhance plant growth and organic soil content over time.

Planting plans will be developed prior to the construction phase for areas along the ridgeline and the Edderton Road realignment. The planting plans will be developed with consideration of functional, environmental/ecological and aesthetic values. Further strategies and techniques regarding the establishment and maintenance of tree screens will be provided in the rehabilitation plan (as required by DRE) to be prepared for the Project.

Ongoing Stakeholder Engagement

Anglo American will conduct ongoing consultation with neighbouring stakeholders over the life of the Project. Should any issues arise in relation to visual impacts on surrounding sensitive viewing locations; these will be addressed through consultation with the relevant parties.

If deemed necessary following further consultation with the relevant stakeholder, additional visual impact mitigation may be achieved at specific sensitive viewing locations via offsite visual treatments.

4.7.5 Predicted Visual Impacts

This section responds to the submissions raised by stakeholders regarding the potential visual impacts associated with the Project.

Submission: RA2, RA6, SIG10, SIG12, SIG13, SIG14, SIG15, SIG16, P2, P5, P6, P8, P9, P12, P13, P29, P30, P32, P40 and P41

The visual impacts of the Project were assessed by considering the sensitivity of identified visual receivers and the visual effect of the Project. Visual effects were determined based on an analysis of a three dimensional computer model and photomontages. This was assessed and presented in Section 7 of the visual impact assessment (see Appendix I of the EA) and Section 8.6.4 of the EA.

The assessment concluded that the visual impact on surrounding receivers will be limited for the majority of the Project life. This is a result of the operational areas of the Project being designed to remain behind existing topography in order to conceal them from views at the most sensitive locations to the south. The exception is the views that will be available to the Houston visual bund while it is being constructed.

The Houston visual bund is required to ensure that longer term views to the operational areas of the Project are screened. Receivers located to the south of the Project, including residences within Jerrys Plains, parts of Coolmore Stud and motorists on the Golden Highway, will experience views of the visual bund while it is being constructed. During this time (estimated 16 months), the visual impacts for these areas will be high. Such impacts will be reduced as rehabilitation is completed and initial cover crops established. This is likely to be no more than three to five months following completion of the final stage lift of construction. After this, the visual impact will be reduced to moderate and then low for the remainder of the Project reflecting decreasing visual effect.

In order to address the submissions received, further detail is provided in the sections below with regard to clarifying the potential impacts that have been predicted for Coolmore Stud, Woodlands Stud, potential views from the air, Arrowfield Estate, areas frequented by tourists, including the Golden Highway, and views to the existing Drayton Mine.

Coolmore Stud

As assessed by the EA, the visual impact on Coolmore Stud is considered limited for the majority of the Project life. The Blakefield, Redbank and Whynot mining areas have been designed to be concealed from views at the most sensitive locations on the flood plain and the slopes of adjoining hills. This includes the main office, major stables, the Batty Hill lookout, site roads and paddocks as well as residences.

The more open views to the Houston mining area along an open gully line are screened from view by the establishment of the Houston visual bund. The construction of the bund will create a high visual effect for a 16 month period. To limit potential high impacts, the construction of the bund has been designed in a series of lifts with progressive rehabilitation being undertaken as part of this process. This limits the visible lifts of the bund to approximately 11 months with all other work occurring behind the initial lifts.

The visual impacts anticipated during the construction of the Houston visual bund from Coolmore Stud are likely to be high. These impacts will be reduced as rehabilitation with cover crops is completed. This is likely to be no more than three to five months following completion of the final stage lift of construction. By Year 5 it is anticipated that the rehabilitation of the visual bund will be complete with tree plantings composed of native species established. After this, visual impact will reduce to moderate and then low reflecting decreasing visual effect.

Once constructed, the Houston visual bund adds to the effect of the existing ridgeline in shielding views from all of the sensitive viewing locations on Coolmore Stud during the remaining years of the Project. This includes views from the Batty Hill lookout, which Coolmore Australia has identified in their submission as an "*extremely important location"*.

There will be open views to the operational areas of the Project, which will result in high visibility and visual effects, from a ridge that supports a maintenance road, cattle yards and the Coolmore Stud quarry. This location has been considered as a broad acre rural area and assigned a low sensitivity as it is not utilised as part of the routine operations of the thoroughbred horse breeding aspects of Coolmore Australia's business. This location also currently has views of the existing Mt Arthur Coal Mine, Hunter Valley Operations Coal Mine and Bayswater Power Station. As such, the visual impacts at this location are assessed as being moderate to low.

Woodlands Stud

The visual impact on Woodlands Stud is very limited. The vast majority of the property is screened by existing topography with the exception of Trig Hill. This viewing location currently has views of the existing Mt Arthur Coal Mine. A detailed analysis (including photomontages) was undertaken on Trig Hill as part of the visual impact assessment with

the findings being discussed and referenced in Section 8.6 of the EA.

Throughout the working group process with Darley Australia, it was discussed that this location is not utilised as part of the routine operations of the thoroughbred horse breeding aspects of Darley Australia's business. The paddocks in this immediate area are predominately utilised for cattle grazing and the highest point on Trig Hill (where the photo was taken from) is fenced off completely to stock. However, as part of the submission from Darley Australia they have now clarified that they rotate horses throughout their property depending on the needs of the horses "*to take advantage of various topographical conditions"*.

As a thoroughbred horse breeding enterprise, Darley Australia's business model is very different from that of the adjoining Coolmore Stud. Woodland Stud breeds and races their own horses and do not have prospective clients coming to visit the property in the way that Coolmore Stud do. As such, it is considered reasonable to conclude that the views that will be available from Trig Hill will not materially detract from Darley Australia's operations at Woodlands Stud, particularly given that there are no views available from any other part of their property.

Furthermore, as has been demonstrated from the other studies undertaken as part of the EA, there are no significant adverse impacts from the operation of the Project on the Trig Hill area or any other part of Woodlands Stud that would prevent the rotation of horses between paddocks.

Views from the Air

It is obvious that the Project will be visible from the air. However, in this context the Project forms part of the aerial view shed, which includes a number of existing mines and industrial areas such as Mt Arthur Coal Mine, Liddell and Bayswater Power Stations and their associated ash dams and facilities, Hunter Valley Operations Mine, Redbank Power Station, United Mine, Wambo Mine, Warkworth Mine and a ranger of others that have been long established in the Hunter Valley. These are all currently visible to aircraft operating in the vicinity of the Drayton South area.

The existence of mines as a landscape unit was defined in Section 3 of the visual impact assessment.

Arrowfield Estate

Arrowfield Estate contains a small vineyard, a winery and cellar door. There are also currently three residences on the property, none of which will experience views of the Project due to screening provided by a significant ridgeline to the immediate south of the Project (see **Figure 28**). Arrowfield Estate is not currently operational, however, the latest owners (United Pastoral) plan to redevelop the site and return it to production. These plans include a proposal to develop a tourist and visitor accommodation facility on part of the site.

Existing topography is effective in shielding views from the majority of Arrowfield Estate with the exception of an area on the highest point of the north-western ridgeline at the back of the property. It is understood that this area may form part of United Pastoral's plans to

redevelop the Arrowfield Estate site. If these plans were to progress, then additional mitigation measures could be developed and implemented at this location, including the establishment of tree screens and/or plantings at the viewing location to reduce visibility to the Project. It is noted that the current plans put forward by United Pastoral, include a range of their own tree screens and plantings so it is envisaged that these could be added to or enhanced as required to achieve adequate screening. Anglo American is committed to ongoing consultation with United Pastoral on such matters.

Tourism

It is recognised that the Golden Highway is a major road that is frequented by tourists travelling between the Lower and Upper Hunter Valley and is often referred to as part of the "*Gateway to the Upper Hunter*". In this regard the Golden Highway has been treated as a sensitive viewing location in the EA.

The Project has been developed to minimise visual impacts from the Golden Highway and to a large degree this has been achieved particularly within the sensitive southern sector. The exception will be views that will be available during the construction of the Houston visual bund and glimpses that would be available from the Ogilvies Hill area of the Golden Highway in the western sector.

It is noted that tourists trafficking the Golden Highway will currently experience views of the Warkworth Mine, Wambo Mine and rail facilities, United Mine, Hunter Valley Operations Mine, Redbank Power Station and the Bayswater Power Station.

Views to the Existing Drayton Mine

External views to the operational areas of the existing Drayton Mine will not vary significantly from those that are currently available. In fact, these will only improve as the final landform is achieved and rehabilitation is complete as mining operations are winding down in these areas. It is noted that some of the submissions received raised concerns with regards to views that are currently available from parts of the New England Highway to the existing northern OEA. The northern OEA has now reached its final landform height and rehabilitation has commenced. Considering that the final landform height has now been achieved it would not be feasible to reshape this OEA as is suggested by one of the submissions received. However over the pending six to 12 months, as this rehabilitation is established the visual effect of this OEA will be reduced for external viewpoints. The rehabilitation of the northern OEA includes the establishment of native woodland species. Once established this woodland vegetation will enable the final landform to better integrate with the surrounding undisturbed landscape.

Scenic and Landscape Values

Section 7.5 of the visual impact assessment (see Appendix I of the EA) and Section 8.6.3 of the EA considers the scenic and landscape values as defined by the SRLUP. As required by the gateway criteria contained within the SRLUP, the impact assessment is required to determine whether the Project would lead to a significant impact on either the viticulture or equine CICs through a "*loss of scenic and landscape values*".

In terms of scenic and landscape quality, the various visual character units that make up the Project site combine to create a common but none the less intact landscape. That intactness is, however, adjoined and to a certain degree compromised by existing mining at Mt Arthur Coal Mine, Hunter Valley Operations and Drayton Mine and the operations of Bayswater Power Station, including the pipeline to the Hunter River and Plashett Dam. Even though the mix of visual character units that make up the Project site and its surrounds create some variety in the rural landscape they would be considered minimal or common in terms of landscape quality.

Given the open character of the Project site it will have a low visual absorption. However, the ridge adjacent to the southern boundary of the Project protects, for the greater part, the sensitive areas of Coolmore Stud, Woodlands Stud and Arrowfield Estate.

Parts of Coolmore Stud to the south of the Golden Highway, including a number of residences, will be exposed to the construction of the Houston visual bund for a period of 16 months. However, the staged construction of the visual bund and progressive rehabilitation will reduce the potential visual impact. In a similar way, the Golden Highway will be screened with exceptions to the east in the vicinity of Jerrys Plains (again with regards to the construction of the Houston visual bund).

As such, the Project does not significantly compromise the long term scenic and landscape settings of the tourism and agricultural businesses around the Project with activities for the greater part screened by existing topography and the Houston visual bund.

4.7.6 Lighting and Dust Assessment

This section responds to the submissions raised by stakeholders regarding the potential visual impacts associated with night lighting and dust generation.

Submission: SIG12, SIG13, SIG14, SIG15, SIG16, P13, P20 and P30

Section 7.6 of the visual impact assessment (see Appendix I of the EA) and Section 8.6.4 of the EA provides an assessment of night lighting, including vehicle lights. The majority of lighting utilised at a mine site is associated with the CHPP, workshops and load out infrastructure, all of which are located at the existing Drayton Mine. These sources are situated over 14 km from receivers to the south of the Drayton South operational area and remain shielded by existing topography and vegetation. The lighting utilised at the existing Drayton Mine will not change as a result of the Project.

Lighting impacts within the Drayton South area will predominantly be caused by lights fitted to mobile equipment operating outside of active mining areas. In most cases, direct light effects will be limited as a result of existing topography and vegetation. However, there may be intermittent direct light effects due to truck movements associated with the construction of the Houston visual bund.

Dust generated by the Project will primarily be associated with mobile equipment within the active mining areas and exposed OEAs. Under extreme wind conditions dust clouds may form; however, this will typically remain localised over the mining areas. Dust clouds generally have limited extent and are temporary in character. The use of real-time monitoring