Illawarra Coal

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7 December 2010

Department of Planning
GPO Box 39
SYDNEY NSW 2001
Attn: Clay Preshaw

Dear Clay

Response to Submissions
Appin Vent Shaft No 6 Project (00-0079)

Thank you for providing submissions received during the public exhibition of the Appin Vent Shaft No 6 Project (00-0079). The Environmental Assessment was on public exhibition between 19 October 2010 and 18 November 2010. Illawarra Coal has considered the matters raised in the submissions and our response is provided in Appendix A. A revised Statement of Commitments is provided in Appendix B.

Additional assessment including an; supplementary vibration assessment for the heritage listed structures (Appendix C) and a Post-Construction Rehabilitation Plan (Appendix D) are also provided.

We look forward to Project Approval as soon as possible. If you have any queries please contact the undersigned.

Yours sincerely,

Bruce Blunden
Manager – Environmental Approvals

Appendix A

Illawarra Coal response to Submissions

Agency Submissions

Heritage Branch

1. An assessment of the magnitude and predicted vibration impacts from the construction and operation of the project is provided in Appendix D of the Environmental Assessment. A supplementary vibration assessment has been undertaken for the heritage buildings and is provided in Attachment C. This supplementary vibration assessment demonstrates that, during both construction and operation of the Project, the magnitude of ground and airborne vibrations that are predicted to occur from the proposal are significantly less than the relevant criteria for heritage and other sensitive structures. Given the construction of the heritage buildings, their current state of repair, and the conclusion in the supplementary vibration assessment that it is unlikely that vibration will contribute to any impact at any heritage building, we consider that further vibration assessment at the Mount Batten Group is unwarranted.

2. Illawarra Coal has amended the Statement of Commitments to incorporate all the recommendations of the Heritage Assessment. The revised Statement of Commitments is provided in Appendix B.

3. Section 5.2 of the draft Heritage Management Plan will be amended to:

The following agencies will be advised of the discovery as soon as possible:

- *Department of Planning*
- *Department of Planning (Heritage Office) in accordance with the requirements of s146 of the Heritage Act (1977)*

4. Illawarra Coal has undertaken the Heritage Impact Assessment for the Appin No 6 Vent Shaft Project using specialist heritage consultants and information available from the Heritage Office in regards to the level of significance of the heritage items. The heritage status of the Mount Batten Group has also been recently assessed by Biosis (2006) and Pearson (2009). The information in previous assessments of heritage significance has been incorporated into this heritage assessment. Illawarra Coal does not concur with the recommendation of the Heritage Office that further

assessment of the Mountbatten Group is warranted. Irrespective of its heritage status, Illawarra Coal has committed several actions in the revised Statement of Commitments that aim to monitor, maintain, conserve and adaptively reuse the heritage listed group of buildings in a manner consistent with their heritage status.

Roads and Traffic Authority (RTA)

The RTA does not object to the proposal subject to a number of design and approval requirements.

Illawarra Coal has been liaising with the RTA and Wollondilly Shire Council (WdSC) to finalise the detailed design of the proposed Menangle Road intersection with the proposed access road in accordance with the requirement of the RTA's letter dated 15 October 2010. The detailed design of the proposed Menangle Road intersection and access road was provided to the RTA and WdSC on 26 November 2010. The detailed designs are provided in the attached CD for your information.

Upon confirmation from the RTA and WdSC that the final design of the Menangle Road intersection is acceptable, and following granting of Project Approval, Illawarra Coal will make an application to the RTA and WdSC for the relevant approvals to undertake the road construction works.

We question the requirement to have a legally binding right of way issued on s88 Instruments where Illawarra Coal is the owner of all the land that is subject to the access road. If, at any time in the future, Illawarra Coal sells any portion of the land which is encumbered by the access track, then the appropriate 'right of way' will be certified on the relevant property titles.

NSW Office of Water (NOW)

NOW raises no objection to the proposal. Illawarra Coal concurs with NOW that transfer of the existing surface water entitlement owned by Illawarra Coal at a nearby pump on the Nepean River to the site will be undertaken in accordance with the requirement of the Metropolitan Water Sharing Plan. Advice from NOW on 25 November 2010 confirmed that lined service boreholes do not fulfil the definition of a 'work' under Part 5 of the Water Act such that no additional licensing obligation is imposed.

We believe that the recommended conditions proposed by NOW are not necessary given they are restatements of regulatory requirements administered by NOW, and thereby represent duplication if they were incorporated into the Project Approval. The No 6 Vent Shaft and related ancillary infrastructure such as the access road will be located and constructed in accordance with the Environmental Assessment which avoids or minimises disturbance to riparian zones. The design of the ancillary infrastructure is in accordance with the intent of the proposed conditions recommended by NOW.

NSW Industry and Investment (NSW I&I)

NSW I&I support this proposal. NSW I&I recommend that two conditions be incorporated into the Project Approval. Illawarra Coal's response to the recommended condition is outlined below.

1. Rehabilitation Management Plan

Illawarra Coal is concerned about the apparent duplication between the rehabilitation requirements of Project Approvals administered by the Department of Planning and the draft policy position of I&I for the requirements for Rehabilitation Environmental Management Plans. We consider that any requirement for a Rehabilitation Management Plan in this Project Approval should not be duplicated elsewhere or be subject to multiple approval authorities.

As outlined in the Environmental Assessment, the proposed No 6 Vent Shaft and ancillary activities will be required for a period of about 30 years to support planned mining activities. It is very likely that rehabilitation standards and land use planning requirements during this period will change, thereby making the preparation of a final rehabilitation management plan difficult at this time. We expect that final rehabilitation requirements for Appin Mine will be subject to the requirements of the Bulli Seam Operations Project Approval and be subject to contemporary standards and planning instruments that exist in the future. As such, we do not support the requirement to prepare a final Rehabilitation Management Plan at this time or in this Project Approval.

Illawarra Coal has committed to rehabilitating the area that will be disturbed upon completion of the shaft construction. The commitment to Post Construction Rehabilitation was described in the Environmental Assessment and Statement of Commitments. A Post-Construction Rehabilitation Plan has been prepared and is provided in Appendix D. The Post-Construction Rehabilitation Plan details the type, extent and nature of post-construction rehabilitation that will be undertaken at the proposed shaft location. A monitoring and maintenance regime is proposed as are success criteria. Illawarra Coal considers that the main objective of the Post-Construction Rehabilitation Plan is to provide a stable landscape that is non-polluting, visually appealing and supportive of the ecological values of the relatively intact Cumberland Plains Woodland to the west of the shaft construction area.

In light of the above, Illawarra Coal does not support the recommendation of I&I to require a Rehabilitation Management Plan as a condition of this Project Approval.

2. Vegetation Management Plan

Illawarra Coal submitted a draft Vegetation Management Plan as part of the No 6 Vent Shaft Environmental Assessment. The Environmental Assessment (Section 9.7 and see Appendix G) demonstrates that clearing of native vegetation has been avoided or minimised via the layout of the

area that will need to be disturbed. The draft Vegetation Management Plan describes a range of management actions to minimise impacts on native vegetation and fauna during various stages of the Project. Clearing of native vegetation is restricted to 3.5 ha of low condition Cumberland Plains Woodland. An offset of 8.1 ha of moderate-high condition Cumberland Plains Woodland is proposed to improve the extent, connectivity, condition and resilience of Cumberland Plains Woodland on the site.

The location and timing of tree screening to minimise visual impacts of the Project is described in the Post Construction Rehabilitation Plan.

Illawarra Coal considers that the issues raised by I&I have already been addressed in the draft Vegetation Management Plan and Post Construction Rehabilitation Plan. As such, we do not support the inclusion of this recommendation as a condition in the Project Approval.

Community Submissions

Smith

Illawarra Coal has undertaken considerable consultation with the Douglas Park community and the RTA/Wollondilly Shire Council to determine the most acceptable access route to the shaft site. The proposed access road for the Project will be constructed over a period of 4-6 months. The access road once built will be sealed to minimise noise and dust during the construction and operation of the shaft and related ancillary activities. The proposed access road is in excess of 210m to the Smith property at its closest point. Given that trucks returning to Menangle Road from the shaft site will be empty, it is unlikely that these vehicles will be required to use air brakes.

A construction noise assessment was undertaken in the Environmental Assessment (see Appendix D). As shown in Table 7-5 of the Noise Assessment, the maximum predicted level of daytime construction noise at Blades Place (Receiver 12 in the noise assessment) is 43 dBA $_{LAeq,\ 15min}$ which will occur during access road construction. This predicted noise level is less than the 50 dBA $_{LAeq,\ 15min}$ criteria specified by DECCW in the Industrial Noise Policy for daytime construction activities.

During the construction and operation of the shaft and ancillary facilities, predicted daytime noise levels from traffic on the access road at Blades Place is 39 dBA. These noise levels are below the Project Specific Noise Levels determined for the Project using the Industrial Noise Policy and less than the noise levels likely to cause sleep disturbance.

An air quality assessment was undertaken in the Environmental Assessment (see Appendix E). During access road construction, airborne dust will be controlled by standard construction methods

such as water sprays. The Air Quality Impact Assessment concludes that *given the temporary nature of the access route construction and implementation of standard dust measures, dust impacts are expected to be minor*.

Harris

The Appin No 6 Vent Shaft is located above the Douglas Main Roadways that will service the ventilation requirements of Appin Areas 7 and 9. An assessment of alternative shaft locations and a justification of the location of the Appin No 6 Vent Shaft is provided in the Environment Assessment (see Section 7). Following an assessment of the underground and surface constraints for all potential alternative shaft locations, Illawarra Coal determined that the proposed location provides for the best mine ventilation capabilities with the least environmental or community impacts.

A noise assessment was undertaken in the Environmental Assessment (see Appendix D) in accordance with the requirement of the NSW Industrial Noise Policy. The Noise Assessment demonstrates that all receiver locations will be below the 39 dBa night time Project Specific Noise Criteria. The predicted noise levels from the operation of the shaft, at Moreton Street is 35 dBA. This is similar to the measured night time background noise levels at this location.

Illawarra Coal will achieve this noise level via a number of design and management measures including:

- Specification of fan noise levels and installation of at source noise abatement design features
- Orientation of the fan discharge away from Douglas Park
- Implementation of a noise bund or wall

A comprehensive noise monitoring program has been proposed in the Noise Management Plan to determine compliance with relevant noise limits. The Noise Management Plan also describes procedures for managing community complaints and how Illawarra Coal would respond to non-compliance.

An air quality assessment was undertaken in the Environmental Assessment (see Appendix E). Dust emissions and impacts from the shaft were modelled using measured dust emission data from similar shafts in the region and dust concentration data measured in mine return air. The predicted 24 hour average PM10 concentration at any residential receiver location will be less than 7 ug/m^3 or 14% of the of the PM10 ambient air assessment criteria published by DECCW (50 ug/m^3). The air assessment criteria published by DECCW have been developed from a health based perspective. As such, the emission of particulate matter from the proposed shaft is well below the ambient concentration where any health impacts would be expected to occur.

The emission of air from the shafts will be directed in a north easterly direction parallel with the rail line away from Douglas Park. Any particulate matter that is emitted from the shaft is likely to fall out in close proximity to this shaft on land owned by Illawarra Coal. Observation of land adjacent to other upcast shafts in the Southern Coal Field demonstrates that particulate fall out is minimal, and where it occurs, is confined to a small area close to the shaft. Where mining will occur in close proximity to the shaft, Illawarra Coal is investigating dust collection screens to be used in return airways to capture dust underground before it is emitted from the shaft.

Appendix B

Revised Statement of Commitments

Objective	Commitment
Working Hours – Construction	
• Minimise impacts on the local area from construction and site implementation operations.	• BHPBIC will undertake construction of the access road during daylight hours, six (6) days per week (Monday – Saturday) for a period of approximately six (6) months. Some works such as; cutting in the access road into Menangle Road, line marking the intersection and installation of the asphaltic concrete may be implemented over a number of weekends and/or involve nightshift work where the traffic volumes are reduced. • BHPBIC will carry out the sinking of the VS#6 by blind boring 24 hours a day, seven (7) days a week. It is anticipated that the shaft sinking be complete after a period of approximately 18 months. • If VS#6 is unable to achieve the required depth using the 'blind bore' methodology, BHPBIC will construct the remainder of the VS#6 using the conventional sink method. No change in the impacts predicted to occur will result from this contingency, although the construction period may increase. • Lining of the shaft will occur on a 24 hours a day, seven (7) days a week basis. Grouting of the shaft liners will occur during daylight hours.
Working Hours – Operation	
• Minimise impacts on the local area from operation of VS#6.	• The VS#6 and associated infrastructure (including fan facilities) will operate 24 hours per day, seven (7) days per week until such time as upcast ventilation is no longer required in the mining domains it is servicing. The anticipated life of the operational phase is ~30 years. • BHPBIC will undertake the delivery of materials to the site during daylight hours, except in times of emergency. • The operation of the service supply boreholes will occur during daylight hours where they may be audible at any residential premises.
Public Consultation	
• Keep local residents informed of BHPBIC operations. • Provide a public opportunity to comment on ongoing operations.	• BHPBIC will continue to liaise with and provide information to the local Douglas Park community via the Douglas Park Advisory Panel or other such community reference group that is deemed appropriate. • BHPBIC will seek to liaise regularly with community representatives regarding traffic management. This is proposed to be done via the establishment of a traffic management sub-committee of the Douglas Park Advisory Panel which will meet as required. • BHPBIC will continue to support the Appin Area Community Working Group (or other such community reference groups that are deemed appropriate) and associated liaison activities to ensure the broader community have an opportunity to raise any questions regarding the VS#6 Project. • BHPBIC will continue to operate the Appin community office (or similar) and maintain a presence also at Douglas Park (currently this is done via twice monthly attendance at the Douglas Park Community Hall) to allow for any public comments or enquiries. • BHPBIC will continue to operate the 24-hour telephone line to provide an alternative method for public information.
Noise	
• Minimise noise impacts from the construction	• BHPBIC has prepared and will implement a Noise Management Plan for both the construction and operational phases of the VS#6 Project.

Objective	Commitment
and operational phases of the VS#6 Project on receivers.	• BHPBIC will undertake construction of the VS#6 using the blind boring method as the first preference, which will minimise noise impacts. • BHPBIC will orientate the VS#6 fans to discharge away from receivers in the Douglas Park Township. • BHPBIC will install a noise mitigation barrier between the VS#6 fan facilities and Douglas Park Township prior to the commencement of the operational phase of the VS#6 Project. • BHPBIC will specify relevant fan noise levels in tender (or contract) documents to achieve compliance with the determined project specific noise criteria. • BHPBIC will undertake quarterly noise monitoring at specified receiver locations in Douglas Park for the first two years of the VS#6 operation. Where compliance with the project specific noise criteria is demonstrated, monitoring will continue on an annual basis.
Air Quality	
• Minimise impacts from dust on surrounding properties during the construction phase. • Minimise impacts from potential emissions of odour and particulate matter during the operational phase.	• BHPBIC will ensure construction activities are managed to minimise the generation of dust. • BHPBIC shall undertake dust suppression activities (such as the use of a water cart) if and when conditions dictate it to be appropriate. • BHPBIC will seal the access road to minimise dust emissions from its use during the construction and operational phases of the VS#6 Project. • BHPBIC will ensure disturbed areas are rehabilitated or treated appropriately to minimise the potential for dust generation. • BHPBIC will orientate the VS#6 fans to discharge away from sensitive receivers in the Douglas Park Township. • BHPBIC will orientate the VS#6 fans at an angle of ~45 degrees to the vertical to minimise the possibility of air quality impacts during the operational phase.
Greenhouse Gas Emissions	
• Minimise impacts to the environment associated with GHG emissions.	• BHPBIC will ensure all plant and operating equipment is maintained appropriately to minimise fuel consumption and associated emissions. • BHPBIC will minimise electrical power consumption during the operational phases of the VS#6 Project where at all practicable.
Water Resources	
• Minimise impacts on: o Surfacewater Quality o Surfacewater Supply o Groundwater.	• BHPBIC has prepared and will implement a Soil and Water Management Plan for both the construction and operational phases of the VS#6 Project to ensure the appropriate management of water resources during project. • BHPBIC will ensure that stormwater runoff, soil and erosion control measures will be managed in accordance with guidelines detailed in the Landcom Publication, "*Soils and Construction" Volume 1, 4th Edition*, dated March 2004. • BHPBIC will construct surface water management measures to such a standard as will contain and treat the runoff of a one in 10 year 72 hour storm for the entire construction phase dirty water catchment. • Surface water captured in the sedimentation pond and farm dam will be reused for shaft drilling, other construction purposes, or treated and discharged from the site. • BHPBIC will source water for the VS#6 Project from the Nepean River in accordance with the requirements of the *Water Sharing Plan 2010* (DECCW 2009) and the *Water Management Act 2000*. • BHPBIC commit to sourcing water from the Nepean River to an upper limit of 50 ML/year and will do so only by the transfer of existing water access rights from another licensed pump within the Menangle Water Management Zone. • BHPBIC will ensure that additional water required for the VS#6 Project will be sourced from an Authorised Sydney Water supply or from the Appin Mine water

Objective	Commitment
	filtration plant. • The VS#6 will be lined using a combination of concrete and steel to preclude interaction between the shaft and groundwater resources during the operational phase. • BHPBIC will ensure the service supply boreholes are cased with steel and grouted from the ground surface to below the depth of any known regionally significant aquifers. • Drilling process pond waste water will be managed in the underground water management system.
Biodiversity	
• Minimise impacts on native flora, fauna and habitat by appropriate management of: o Vegetation Clearing o Cumberland Plain Woodland (CPW).	• BHPBIC has prepared and will implement a Vegetation Management Plan (VMP) for both the construction and operational phases of the VS#6 Project. • BHPBIC will set aside and manage an offset area of CPW in accordance with the requirements of the VMP. • BHPBIC will minimise the amount of clearing of native vegetation and mature trees at the site where are all possible. • BHPBIC will undertake a two-stage clearing process for the felling of any hollow bearing trees. • BHPBIC will use vegetation species representative of the CPW in rehabilitation activities where at all practicable.
Heritage (Aboriginal)	
• Minimise impacts on Aboriginal cultural heritage.	• BHPBIC has prepared and will implement a Heritage Management Plan (HMP) for the VS#6 Project. • BHPBIC will ensure that Aboriginal cultural sites will be temporally fenced and avoided during construction where possible. • BHPBIC will ensure that any Aboriginal cultural sites which may be impacted during construction will be managed in accordance with the HMP and in consultation with registered Aboriginal Stakeholders.
Heritage (European)	
• Minimise impacts on non-Aboriginal cultural heritage.	• BHPBIC will manage and conserve the Mountbatten Group in manner consistent with its heritage values. • BHPBIC will ensure that any relics which may be discovered during construction will be assessed and documented by an appropriately qualified cultural heritage expert. Where it is relevant to do so, relics will be retrieved and managed in accordance with any recommendations made by the cultural heritage expert. • BHPBIC will ensure the sympathetic placement of new buildings and structures on the property will continue to be implemented throughout the construction and operational phases of the development. • BHPBIC will ensure that sympathetic finishes and vegetation screening will be used to screen and separate the new buildings and structures from the heritage items. • BHPBIC will ensure that vegetation clearing will be minimised, and should not include historical plantings in the vicinity of the Morton Park: Mountbatten Group. • A management plan for the construction phase of the project has been developed to: o describe procedures for the discovery of suspected archaeological relics during the construction phase of the project; o describe procedures for heritage impact assessment in the case of unforeseen contingencies that may impact heritage significance beyond that assessed in this report.

Objective	Commitment
Traffic	
• Reduce the potential for traffic associated with the proposed development to create congestion. • Minimise potential traffic impacts to the Douglas Park Township from the VS#6 Project. • Protect road safety.	• BHPBIC has prepared and will implement a Traffic Management Plan (TMP) for both the construction and operational phases of the VS#6 Project to minimise traffic impacts and ensure continued road safety. • BHPBIC will construct a site access road and intersection to reduce traffic impacts on Menangle Road as approved by the RTA and/or WSC. • BHPBIC will ensure the Contractor/s implement appropriate warning signs and traffic control measures as required by the TMP. • BHPBIC will ensure a Journey Management Plan is developed by the Contractor/s and approved by the BHPBIC Project Manager prior to the commencement of any works. This plan will guide appropriate controls for movement of drill rigs and other heavy vehicles. • BHPBIC will advise local residents of the commencement of construction works, any related possible disruptions to local traffic through traffic management sub-committee of the Douglas Park Advisory Panel.
Risks and Hazards	
• Minimise potential risks to public safety form the proposed development.	• BHPBIC will ensure the Contractor/s abide by the Company HSEC Policies and EMS. • BHPBIC will ensure that the Contractor/s undertake the appropriate investigations with regards to underground service locations prior to the commencement of any excavation works. • BHPBIC will ensure that diesel storages and pipelines on the VS#6 Site are constructed and maintained in accordance with the appropriate Australian Standards (including the installation of bunding and pumps). • BHPBIC will ensure that the appropriate risk management equipment (such as fire fighting facilities and spill kits) are present and maintained on the VS#6 Site and that staff are trained in their use. • BHPBIC will install safety fencing around all excavations and high risk areas of the site (e.g. the switchyard) to mitigate the risks associated with unauthorised access. Vehicular accesses will be gated and locked when not in use.
Waste	
• Minimise impacts on the environment associated with waste generation and disposal.	• BHPBIC will minimise waste generation through the emplacement of the shaft spoil material on site for later re-use in shaft rehabilitation. • BHPBIC will beneficially re-use borehole drilling spoil and other excavated material at locations that may include: o On-site for construction purposes o On-site in the shaft spoil emplacement area for rehabilitation purposes o On-site for construction of the noise barrier o At West Cliff Emplacement Area for site capping or rehabilitation. • BHPBIC will appropriately capture and transfer waste to suitable re-use, recycling or disposal locations.
Visual Amenity	
• Minimise the potential visual impact of the development on the surrounding landscape. • Minimise the exposure of offsite receivers to night lighting during the construction phase.	• BHPBIC will minimise the amount of clearing of native vegetation and mature trees at the site where at all possible. • BHPBIC will avoid the use of highly reflective materials and/or colours which are not commensurate with the surrounds in the supply and installation of VS#6 infrastructure. • BHPBIC will include screening trees in any revegetation works, as and where appropriate. • BHPBIC will minimise the use of floodlighting to the construction phase of the

Objective	Commitment
	project where reasonably practical and safe to do so. • BHPBIC will minimise the spill of lighting off-site by directing lighting away from sensitive receivers, ensuring that lights do not shine above the horizontal and ensuring lighting is turned off when not required.
Rehabilitation	
• Reduce long term effects from the proposed development on the natural and cultural heritage of the site. • Ensure public and/or private safety following completion the operation of the VS#6 and boreholes.	• BHPBIC will undertake rehabilitation of any areas disturbed by the VS#6 Project to ensure the environment is returned as close as possible to the pre-development condition and/or to meet landowner specific requirements. • BHPBIC will ensure that the de-commissioning of the boreholes and the shaft will be undertaken in accordance with the requirements of the relevant government department (currently I&I).
Construction Management	
• Minimise impact on environment from construction work. • Ensure employee safety during construction.	• BHPBIC will ensure the Contractor/s abide by the Company HSEC Policies and EMS. • BHPBIC will ensure the successful Contractor/s conduct a Construction Risk Assessment and prepare safe work method statement/s for approval by BHPBIC at the relevant stages of the site work prior to work commencing. • BHPBIC will ensure the Contractor/s will maintain equipment to a safe standard and ensure secure storage. • BHPBIC will ensure all works conducted in accordance with relevant construction legislation and industry leading practice. • BHPBIC will ensure that the Contractor's work force receives the necessary training as per the relevant construction legislation and industry leading practice prior to commencing work on site.

Appendix C

Vibration Assessment for Heritage Buildings

1 December 2010

WM Project Number: 10112
Our Ref: BHP011210 GJ ltr_Heritage Impact Assessment

Mr Bruce Blunden
Illawarra Coal / BHP Billiton
PO Box 514
UNANDERRA NSW 2526

Dear Bruce

Re: BHP Vent Shaft #6, Douglas Park - Heritage Impact Assessment

Wilkinson Murray Report 10112 was a noise assessment of the proposed Vent Shaft #6 at Douglas Park, NSW. In response to the environmental assessment of the project, the Heritage Branch of the NSW Department of Planning have requested further information concerning the potential impacts of the proposal on heritage items near the proposal. In particular, they request further assessment at the Mountbatten Group of heritage buildings. This group of buildings is approximately 350m from the site of the proposed vent shaft.

In this letter, an assessment is presented of the potential impact of noise and vibration from construction and operation of the vent shaft. All other heritage items are further from the project than the Mountbatten group. Hence if there is no risk to the Mountbatten group it is concluded that there would be no risk to other heritage items

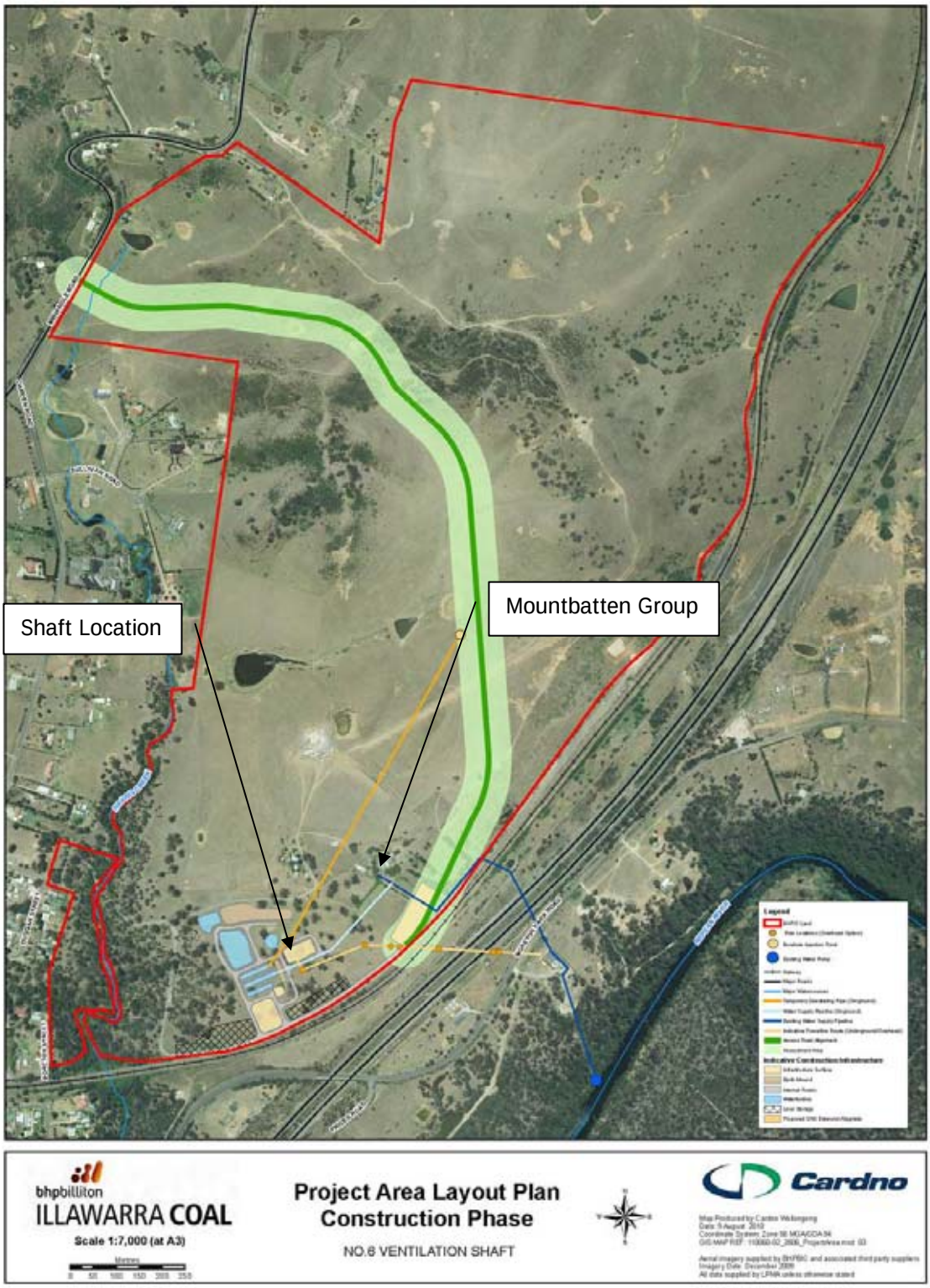
DESCRIPTION OF THE PROPOSAL

The site location is shown on Figure 1. The project comprises construction of a new upcast ventilation shaft, known as VS#6, near the town of Douglas Park in NSW. There would be associated surface infrastructure and a series of service bore holes as part of the VS#6 proposals. The vent shaft would be approximately 6m in diameter and 530m deep. The shaft would take approximately 21 months to build.

Figure 1 also shows the location of the Mountbatten Group of buildings with respect to the site. The proposed access road (shown in green on the figure) would pass approximately 100m to the east of the Mountbatten Group. Due to the distance to the buildings from the site, risk of damage from noise and vibration is considered low. However, in this report the following potential risks are assessed:

- vibration from construction and operation of the access road;
- vibration from construction and operation of the ventilation shaft and associated infrastructure; and
- noise from operation of the ventilation shaft.

Figure 1 Site Location



VIBRATION ASSESSMENT

Vibration Criteria

German Standard DIN 4150: Part 3 - 1999 "Structural vibration – Effects of vibration on structures" provides guideline levels of vibration velocity for evaluating the effects of vibration in structures. The limits presented in this standard are generally recognised to be conservative.

For long-term vibration, the Standard gives criteria in terms of the highest value of the two horizontal components of vibration, measured in the top floor of the building. The guideline values are:

- buildings used for commercial purpose: 10 mm/sec
- dwellings and buildings of similar design and/or occupancy: 5 mm/sec
- structures that, because of their particular ensitivity to vibration, cannot be classified as either of the above and are of great intrinsic value: 2.5 mm/sec.

For short-term vibration, the DIN 4150 values (maximum levels measured in any direction at the foundation of a building, or maximum levels measured in (x) or (y) horizontal directions in the plane of the uppermost floor), are summarised in Table 1, and shown graphically in Figure 2.

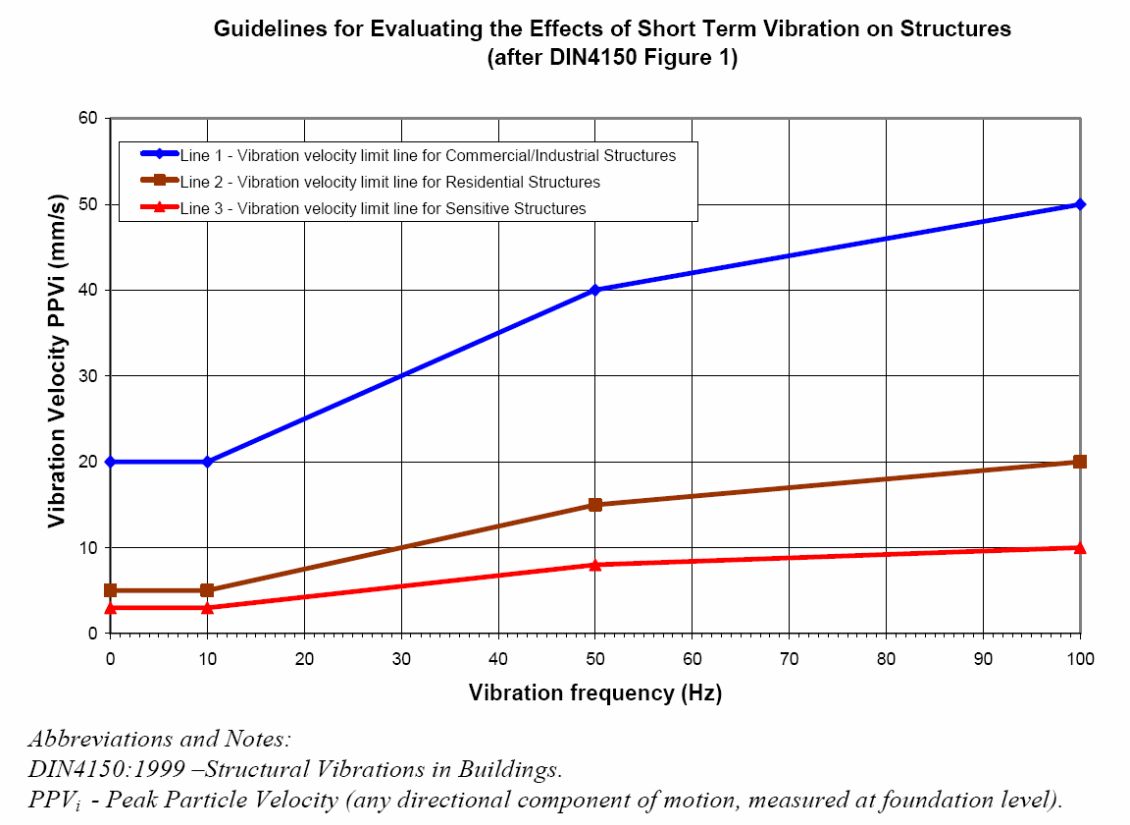
These vibration guidelines are "safe limits", up to which no damage due to vibration effects has been observed for the particular class of building. "Damage" is defined by DIN 4150 to include even minor non-structural effects such as superficial cracking in cement render, the enlargement of cracks already present, and the separation of partitions or intermediate walls from load bearing walls.

Should such damage be observed without vibration levels exceeding the "safe limits", then it should be attributed to other causes. DIN 4150 also states that when vibration levels higher than the "safe limits" are present, it does not necessarily follow that damage will occur.

Table 1 Vibration Guidelines to Avoid Building Damage
(source – German Standard DIN 4150: Part 3 1999)

Type of Structures	Guideline Values for Velocity in mm/s			
	Vibration at the Foundation at a Frequency of			Vibration at Horizontal Plane of Highest Floor at all Frequencies
	1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz (and frequencies above 100 Hz)	
Commercial and industrial	20	20 to 40	40 to 50	40
Dwellings	5	5 to 15	15 to 20	15
Heritage and other sensitive structures	3	3 to 8	8 to 10	8

Figure 2 Structural Damage Vibration Criteria
(source – German Standard DIN 4150: Part 3 1999)



Abbreviations and Notes:
DIN4150:1999 –Structural Vibrations in Buildings.
PPV_i - Peak Particle Velocity (any directional component of motion, measured at foundation level).

Vibration Impacts during Construction

During large-scale construction activities, ground vibration may be caused by a variety of activities. Table 2 provides some estimated vibration levels at a range of distances from piling, rock hammering, sawing, drilling and ground compaction operations.

Table 2 Typical Vibration Emission Levels from Construction Plant for Typical Worst-Case Ground Conditions*

Source	Peak Particle Vibration levels, mm/s					
	5m	10m	20m	30m	40m	50m
Rock saw	-	0.5	0.3	0.2	-	-
4-tonne vibratory roller (high)	-	2.0-2.4	0.4-1.2	0.2-0.8	-	-
Large vibratory roller	-	4.1	2.6	2.4	2.2	1.9
Light rock hammer (e.g. 600kg)	0.2	0.06	0.02	0.01	-	-
Hydraulic hammer (30 tonne)	-	3	1.5	1.0	-	-
Heavy rock breaker	4.5	1.3	0.4	0.2	0.12	0.085
Rock drill (estimate)	-	0.5	0.2	0.1	0.05	0.04
Bored piling	-	0.2	<0.1	-	-	-
Impact piling	-	3.5	1.0	0.5	-	-

*Data measured in Sydney sandstone

Table 2 shows that at 50m from any of the construction activities, the vibration levels are predicted to be well below both the short-term and the long-term criterion for damage to heritage buildings. Hence, at the minimum distances of 100m from the access road, 350m from the shaft, and 180m from other earthworks, vibration levels will even further below the criterion. Hence, no impact on the structures in the group is predicted.

Note that piling is not proposed for this site, and it is unlikely that rock hammers would be used. They are shown here as an indication of vibration generation by construction activities and to illustrate the low risk of vibration impacts from activities that would occur at this site.

Vibration Impact during Operation

During operation, the only source of vibration would be from the rotating machinery of the fan and drive motors. As the fans would be balanced for continuous operation, the vibration would be undetectable at the Mt Batten Group of buildings. No impact is predicted.

NOISE IMPACT ASSESSMENT

Noise Criteria

The only noise criteria with respect to building damage are those for blasting. Noise from blasting is typically limited to a maximum over-pressure of 133dBL. This is based on discussion in Appendix J of Australian Standard 2187.2-2006 *Explosives – Storage and Use, Part 2: Use of Explosives*. The Standard refers to the US Bureau of Mines Study RI 8485, in which it is stated that damage to buildings was recorded at peak levels of 152dBL.

A more conservative limit is adopted in France (Arrêté du 22 Septembre 1994). The French limit is a peak level of 125dBL.

Predicted Noise Level

At the operational phase of the vent shaft, there would be two fans operating continuously. The maximum sound power levels for individual fans, as specified for the project, are shown in Table 3. The maximum Sound Power Level of each fan would be 113dBL.

The nearest building to the fan discharges is 350m. A predicted maximum sound pressure level at any of the Mountbatten Group buildings is 57dBL. Under reasonable assumptions regarding the sound waveform, this corresponds to a peak level of approximately 60dBL. This is 65dB below the most conservative noise criterion for damage to structures; hence, no impact is predicted.

Table 3 Spectrum for One Fan

	Octave Band Centre Frequency, Hz									Overall Level	
	31.5	63	125	250	500	1000	2000	4000	8000	A	Lin
Single Fan Sound Power Level	107	107	107	103	100	99	97	93	89	104	113

CONCLUSION

Noise and vibration from the proposed construction and operation of VS#6 at Douglas Park was assessed in terms of potential impact on heritage items.

The only heritage item considered potentially at risk is the Mountbatten Group of buildings 350m from the VS#6.

No impact from noise and vibration is predicted at the buildings as they are sufficiently distant from the site, and the access road, to allow all noise and vibration to fall to levels well below relevant criteria.

All other heritage items are further from the site than the Mountbatten Group, and no impact is predicted.

I trust this information is sufficient. Please contact us if you have any further queries.

Yours faithfully
WILKINSON MURRAY

George Jenner
Associate

Appendix D

Post Construction Rehabilitation Management Plan

Appin Mine
Ventilation Shaft No.6 Project

Environmental Management Strategy

DRAFT Post Construction Rehabilitation Management Plan

Review History

Revision	Description of Changes	Date	Approved
P0	New Document	30 November 2010	

Persons involved in the development of this document include:

Name	Title	Company
Adam West	Environment & Community Coordinator – AA9 Project	BHP Billiton Illawarra Coal
Bruce Blunden	Environmental Approvals Manager	BHP Billiton Illawarra Coal
Lou Lingurovski	Senior Projects Engineer – AA9 Project	Hatch

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1 OBJECTIVES

The objectives of this Post Construction Rehabilitation Management Plan are to:

- Ensure the Ventilation Shaft No.6 (VS#6) Project complies with the relevant regulatory requirements set out in the Project Approval, government requirements and other legislation with regards to rehabilitation;
- Ensure BHP Billiton environmental and other relevant Strategies and Policies are met and upheld;
- Describe project specific rehabilitation criteria;
- Develop a program/inspection regime to ensure rehabilitation activities for the project are performing in a satisfactory manner; and
- Provide procedures associated with reporting the results of the monitoring
- Provide procedures for determination of compliance and handling non-compliance;
- Provide procedures for community liaison (including complaints handling); and the person responsible for implementation of the Plan.

The following sections provide some background and details on the management measures required to manage rehabilitation during the construction and operation of the VS#6.

2 LEGISLATIVE AND OTHER REQUIREMENTS

2.1 Legislative Requirements

In NSW legislation applicable to rehabilitation of mines includes but is not limited to:

- Environmental Planning and Assessment Act 1979
- Mining Act 1992
- Mining Amendment Act 2008

However the rehabilitation planning process is currently under review (November 2010), with no final guidelines issued at the time this Management Plan was being developed.

Relevant Guidelines include:

- Mine Rehabilitation – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia).
- Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia).
- Strategic Framework for Mine Closure (ANZMEC).
- EDG01 Borehole Sealing Requirements on Land: Coal Exploration (DMR 1997).
- Guidelines for the Permanent Filling and Capping of Surface Entries to Coal Seams (DPI 2005).
- Other relevant I&I NSW guidelines.
- Appropriate BHPBIC guidelines and procedures.

2.2 Post Construction Rehabilitation Justification

Rehabilitation is defined by the Mining Act 1992 as *the treatment or management of disturbed land or water for the purpose of establishing a safe and stable environment*. All rehabilitation must meet with I&I NSW objective of achieving an agreed post-mining land use that is safe, stable, non-polluting and sustainable.

As outlined in the Environmental Assessment for VS#6, the facilities and ancillary activities will be required for a period of about 30 years to support planned mining activities. Hence the post-mining land use of this site will greatly depend on a number of factors, including surrounding land use, local planning instruments and community needs. These aspects will be addressed in the closure and rehabilitation plans in place for Appin Colliery (currently the Mining Operations Plan and Mine Closure Plan, draft policy position of I&I indicate this is soon to be the Rehabilitation Environmental Management Plan).

This Post Construction Rehabilitation Management Plan has been developed for the shorter term rehabilitation of disturbed sites associated with VS#6 post-construction, as well as

maintenance and improvement of the Cumberland Plains Woodland Offset Area located on site. This Management Plan aligns with actions from the already submitted Environmental Assessment, and the Soil & Water and Vegetation Management Plans.

3 BACKGROUND DATA

3.1 Site Location

The site location is shown on the Project Area Layout Plan for the Construction Phase in **Figure 3.1**. The township of Douglas Park is located directly to the west of the site, across Harris Creek. The site is bounded by major infrastructure to the south and east, including the Main Southern Rail Line, Hume Highway and Moreton Park Road.

3.2 Baseline Condition

The baseline condition of the property was assessed for preparation of the Environmental Assessment, dated September 2010. This was submitted to the relevant agencies, along with the application for VS#6, on 15 October 2010.

The existing landscape within the VS#6 Project Area is primarily cleared, open land, dominated by pasture and grasslands. The site is characterised by undulating to hilly topography, used for residential and agricultural purposes. There are some significant stands of native vegetation on site, including communities which comprise a part of the Cumberland Plain Woodland (CPW) Endangered Ecological Community (EEC). This EEC is listed as Critically Endangered in both the TSC Act and EPBC Act. The shaft site itself is bound by the Harris Creek riparian zone, which contains a significant stand of mature trees, tending to remnant vegetation towards the creek. A variety of weeds and exotic plant species exist on site. The site validated vegetation mapping data is shown in **Figure 3.2**.

3.3 Proposed Site Establishment Construction Activities

To establish the VS#6 Site the following works will be undertaken:

- Vegetation clearing (in stages, stockpiled on site for post construction rehabilitation of site). This includes up to 3.5 ha of native vegetation (mainly CPW EEC) and 2.4 ha of exotic pasture)
- Topsoil stripping (in stages, stockpiled on site for post construction rehabilitation of site).
- Construction of internal access roads.
- Construction of drilling pad and power supply.
- Construction of shaft liner pre-fabrication yard.
- Mobilisation of blind boring equipment and assembly of equipment on site.
- Construction of shaft spoil storage area and process ponds.
- Installation of temporary site sheds.
- Supply of water to the site
- Installation of surface water management measures.

The above activities will cause impacts to the VS#6 site, many of which will require rehabilitation post-construction.

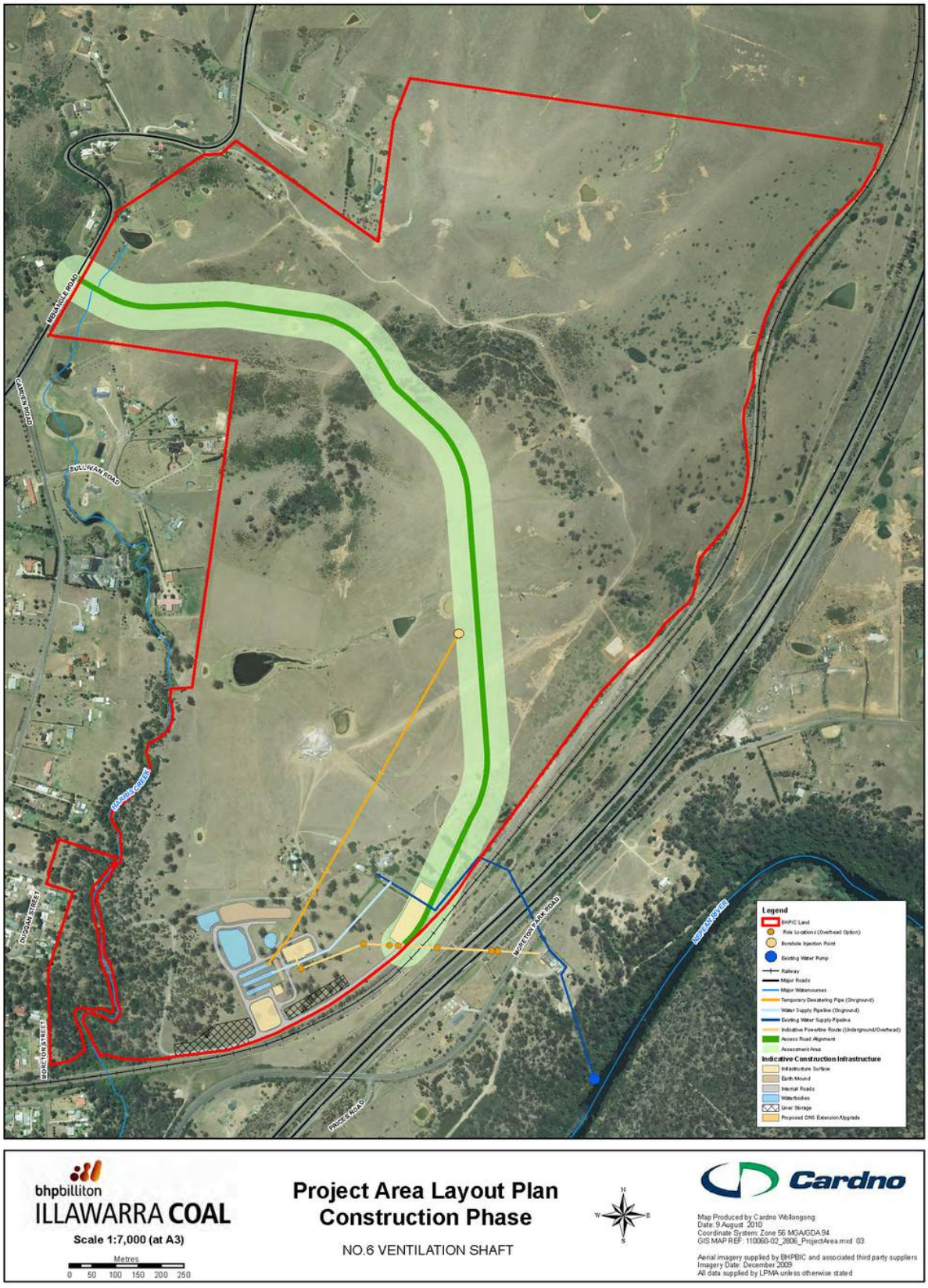

Figure 3.1 - Site Location and Layout

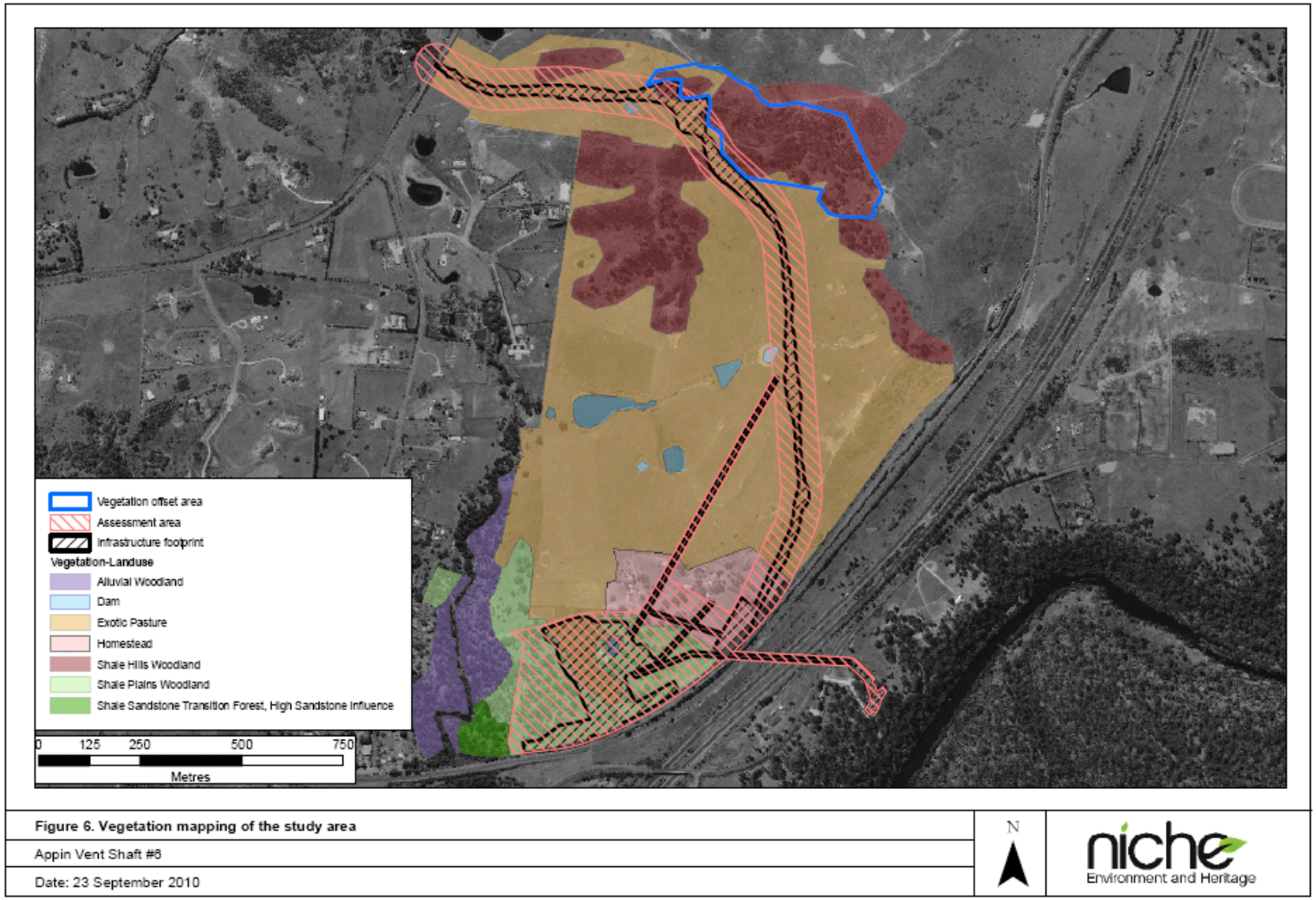

Figure 3.2 – Vegetation Mapping of the Study Area.

4 REHABILITATION MANAGEMENT STRATEGIES

4.1 Staged Construction and Rehabilitation

Construction will take place progressively, with rehabilitation staged to occur both during and post-construction.

To minimise the potential for any unnecessary damage or clearing to the CPW Offset Area or CPW located between the VS#6 Site and Harris Ck, fence lines will be installed prior to construction activities to isolate these vegetation zones.

Construction works will initially be focussed on the access road, before progressing to the VS#6 Site, then the service/supply boreholes.

Post-construction rehabilitation works will be staged and will include:

- Rehabilitation of the disturbed areas alongside the access road.
- Removing shaft sinking equipment and temporary infrastructure not required during the operational phase.
- Removing internal access roads not required during the operational phase.
- Rehabilitation of construction phase disturbance areas.
- Revegetating the shaft spoil emplacement area and noise mitigation bund.
- Decommissioning and rehabilitating the process ponds and shaft spoil dewatering facilities.
- Decommissioning and rehabilitating the spoil emplacement area primary sedimentation pond once the spoil emplacement area revegetation is complete.
- Progressive rehabilitation of surface to seam boreholes if they are surplus to requirements.

Materials for rehabilitation will be collected throughout the construction phase. This includes topsoil which will be stockpiled on site, Cumberland Plain Woodland and native grass seed will be collected by a specialist contractor, and tree trunks/branches which will also be stockpiled on site for creating fauna habitat in the existing vegetated areas.

4.2 VS#6 Site Post-Construction Rehabilitation Outcomes

The post-construction rehabilitation works associated with the VS#6 Site are proposed to be undertaken as per **Figure 4.1**. Process ponds and the primary sedimentation pond will be:

- Drained and all contaminated or unsuitable fill material removed or treated as appropriate.
- Backfilled with suitable dam wall fill material and/or material as appropriate.

- Re-profiled and compacted to create a final landform with non-erodible sustainable grades and no pooled areas, as close as possible to the original topography and/or consistent with the surrounding area.
- Topsoiled and revegetated.

Where possible, topsoil will be utilised from that stockpiled on site during the construction phase.

Vegetation is proposed to be established on the site as follows:

Native Grass

Native grass cover is to be established on the liner preparation/storage areas adjacent to the Shaft infrastructure. These areas have telecommunications cables beneath which may require future access. Native grass is also to be used to cover and stabilise the rehabilitated Main Sedimentation Pond. Grass cover enables a fire break to be maintained around the shaft infrastructure.

Native Grass and Tubestock

The Noise Mitigation Bund, Spoil Emplacement and Spoil Emplacement Drainage Dam are all to be established with a grass cover and planted with tube stock. This will both stabilise these areas, as well as create visual screening of the facilities from the Douglas Park township. Native species will be utilised and, as possible, Cumberland Plain Woodland species will be planted.

Screen Planting

Two areas are identified as sites for vegetation planting to create a screen from adjacent public areas and residential properties. A screen is proposed between the site and Douglas Park, as well as between the site and Moreton Park Road. This screen will be planted as soon as possible after approval has been issued for the VS#6 Project. It is proposed to use native, fast growing species, with a preference for Cumberland Plain Woodland vegetation to also be included if suitable for these particular areas.

Tree/Branch Habitat Enhancement

Any mature trees cleared for the purpose of site construction will be either relocated into the CPW zones for fauna habitat purposes, or mulched for rehabilitation purposes.

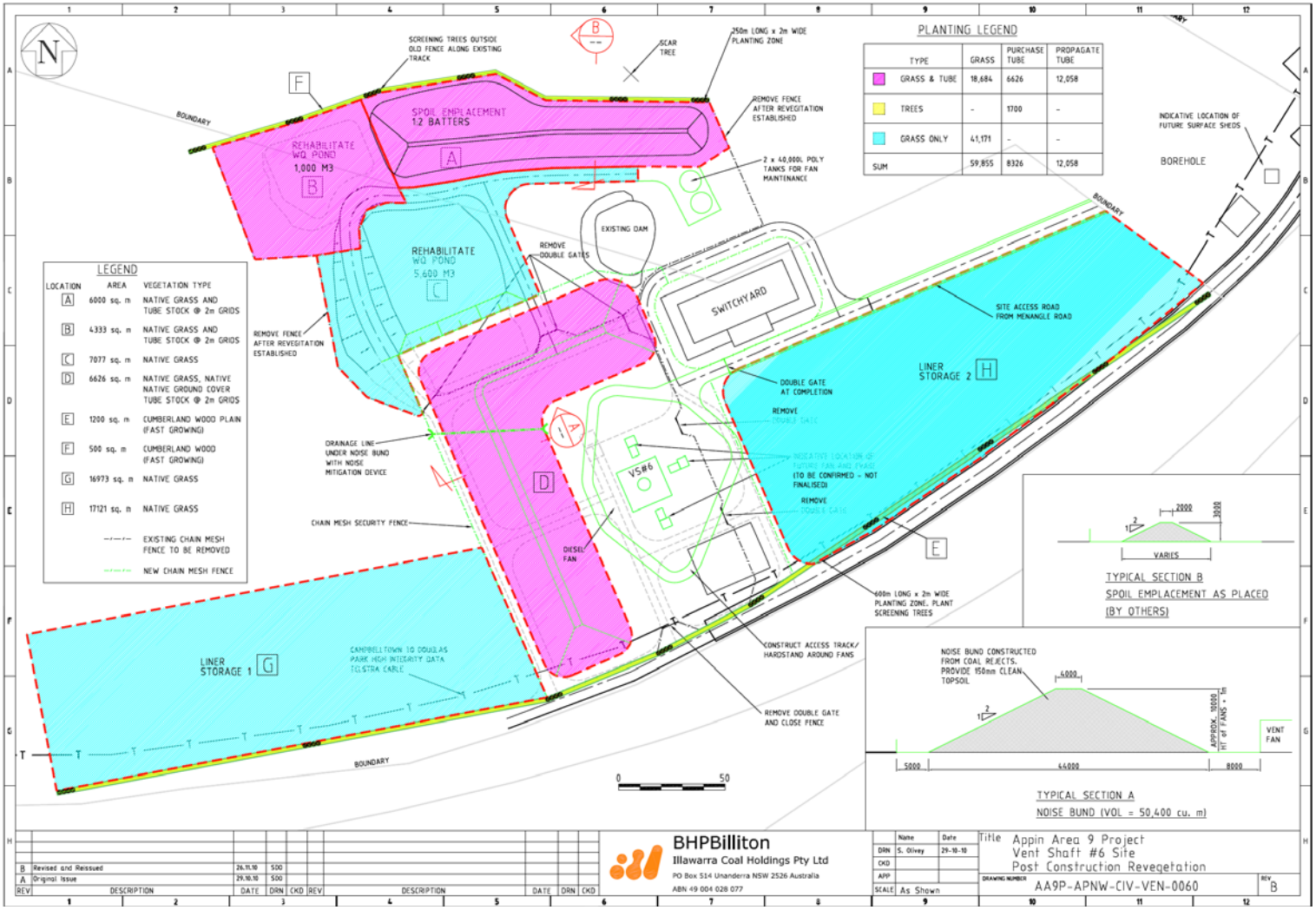

Figure 4.1 – Post Construction Rehabilitation/Vegetation for VS#6 Site.

4.3 Post-Construction Cumberland Plain Woodland Offset Area Outcomes

As outlined in the Environmental Assessment, up to 3.5 ha of native vegetation will be removed for the construction and operation of the VS#6 Project. This area includes lower quality CPW. To offset this proposed loss of vegetation BHPBIC have proposed to improve the condition of the higher quality CPW established on a ridgeline parallel to the proposed access road (see blue area in Figure 3.2). A series of mitigation/management actions are proposed which will rehabilitate/improve this Offset Area. These include:

Seed and Plant Collection

BHPBIC will employ a specialist bush regeneration contractor to collect seed from the CPW located onsite. This seed will be utilised for the propagation of tube stock and/or direct seeding either in the Offset Area, or for other rehabilitation works on site. Where small plants are established on areas to be cleared they will be translocated, as possible, to improve existing vegetation areas or for screening purposes.

Weed Management

A bush regeneration contractor will be scheduled to undertake quarterly weed control works in the CPW Offset Area, six-monthly for the shoulders of the access road rehabilitation, as well as quarterly targeting of noxious weeds on the remainder of the site.

Initially Offset Area works will target the established weeds identified during the Environmental Assessment, including blackberry, African olive, lantana, African boxthorn, privet and cape ivy. Once these have been removed, quarterly weed control will become maintenance works to prevent any re-establishment.

5 COMMUNITY CONSULTATION AND NOTIFICATION

A good relationship between BHPBIC and the local Douglas Park community is an important consideration for the VS#6 Project and for BHPBIC in general. The community is more likely to be understanding and accepting of potential impacts if accurate information provided is open and honest and that any agreed commitments are adhered to. Such information and commitments would include addressing the ongoing rehabilitation of the site.
BHPBIC will continue to explore opportunities to undertake post-construction rehabilitation in a way that improves the aesthetics of the site for the Douglas Park Community and enhances the existing environment. The community will also be consulted closer to the ceasing of mining activities at the site with regard to the final rehabilitation of the site.

BHPBIC has appointed an Environment and Community Coordinator to facilitate and maintain communication lines between the Project and the Douglas Park community.

5.1 Complaints Handling

- BHPBIC provide a readily accessible contact point through a 24 hour toll-free Community Call Line (1800 102 210) will be displayed prominently on the site in a position visible by the public as well as on publications sent to the local community;
- Respond to complaints in accordance with the BHPBIC Community Complaints and Enquiry Procedure;
- Maintain good relations and communication lines between community and project staff;
- Keep a register of any complaints, including the details of the complaint with information such as:
    - Time and Date;
    - Person receiving the complaint;
    - Complainant's contact name and phone number;
    - Person complaint is referred to;
    - Description of the complaint;
    - Work area where complaint relates to;
    - Time of verbal response;
    - Timeframe for written response where appropriate.

5.2 Response to Complaints

In the event that any complaints are received about the condition of the site subsequent management of the impact may be required. Any project site related complaints should be forwarded onto the BHPBIC Environment and Community Coordinator or appointed Site Supervisor/Manager. The response will depend on the nature of the activity that generated the

complaint and this shall be dealt with by the BHPBIC Environment and Community Coordinator or Site Supervisor/Manager.

6 MONITORING AND REPORTING

6.1 Success Criteria and Rehabilitation Monitoring

Weekly inspections will be undertaken to monitor a number of environment and community aspects including rehabilitation performance. Inspection criteria are extracted from key commitments in existing Management Plans, the Environmental Assessment, as well as consent conditions issued in the Project Approval. Inspections will involve the Project Manager and/or Environment and Community Coordinator.

Success for the Post Construction Rehabilitation will be determined by achieving:

- ground cover sufficient to provide a stable, non-erodible land surface that does not require routine maintenance
- establishment of self supporting native vegetation of areas planted with tube stock;
- establishment of vegetated screens that reduce the visual impact of the site

Quarterly monitoring of the CPW Offset Area will be undertaken by the bush regeneration contractor at the same time as maintenance and weed management area are performed. This will include the establishment of photo monitoring points for long term comparison of vegetation condition. A summary report will be provided to the Environment and Community Coordinator.

6.2 Reporting

Rehabilitation reporting will be in accordance with the consent conditions of the Project Approval.

Rehabilitation programs undertaken for the prior year and expected for the following year will be reported in the Annual Report.

REFERENCES

BHPBIC 2010 Appin Mine Ventilation Shaft No 6 Project Soil & Water Management Plan. September 2010.

BHPBIC 2010 Appin Mine Ventilation Shaft No 6 Project Vegetation Management Plan. September 2010.

BHPBIC 2010. AA9 Project Ventilation Shaft #6 Site Post Construction Revegetation Works. September 2010.

Cardno 2010, Vent Shaft No.6 Project Environmental Assessment. Report for BHP Billiton Illawarra Coal. Cardno Ref: 110060-2 Report 001 p1. August 2010.