CONTENTS

LIST OF TABLES

6.0 MEASURES PROPOSED TO MITIGATE ADVERSE IMPACTS ON THE ENVIRONMENT

Key points

- The Diversion of Bowmans Creek has been designed to accommodate a 1 in 100 year flood event;
- The Ashton Coal Project will establish a community consultative committee;
- Subsidence is predicted to be managed. The subsidence area will be continually monitored as part of a subsidence management plan;
- Air quality impacts will be managed by suspending mine activities under unfavourable wind conditions;
- Dumping of overburden will be managed in consideration of prevailing weather conditions to avoid exceedences to nearby receptors;
- The diversion of Bowmans Creek has been designed to accommodate a 1 in 100 year flood event;
- A sustainable landscape management plan will be compiled;
- The Ashton Coal Project will establish a community consultative committee;
- The excised section of Bowmans Creek will be rehabilitated to provide compensatory habitat; and
- Visual impacts will be minimised with a combination of bunding and screen planting.

6.1 Subsidence Control and Amelioration

The extraction of coal by underground longwall methods will result in subsidence of the surface above the mine. This will occur progressively over a period of 18 years. Details of the extent of subsidence are presented in the report prepared by GE Holt and Associates Pty Ltd which is included as **Appendix P** of **Volume 2**.

Care has been taken to ensure that the projected limit of subsidence does not impact the Hunter River or Glennies Creek, the Bowmans Creek diversion and the New England Highway.

The majority of the surface area over the longwall panels and within the limit of subsidence is owned by mining companies and used for cattle grazing.

The subsidence area will be visually monitored and remedial measures implemented to ensure erosion does not occur due to subsidence. This will generally involve dozing over any large surface cracks that may appear in order to prevent injury to stock or diversion of surface water. Water storage dams and the power lines which intersect the site will also be inspected on a regular basis during periods of potential subsidence. These structures will be repaired immediately upon cessation of the subsidence events.

Particular care will also be taken to ensure that any cracks discovered within the Bowmans Creek floodplain are appropriately sealed to prevent water ingress to the underground mine from run off from rainfall or flooding events.

6.2 Air Quality

Air quality modelling indicated that open cut operations will result in exceedences of air quality standards in the northern part of Camberwell village unless special precautions or controls are established. The modelling work also shows that with special precautions the Ashton Coal Project as proposed would be able to maintain air quality within the village of Camberwell at acceptable levels.

The special precautions involve the relocation (and in the extreme case cessation of mining operations) under unfavourable weather conditions. The modelling shows that with all active mining operations curtailed, the residual emissions from wind erosion under very windy conditions would not cause the 24 hour PM_{10} concentration due to emissions from the mine to exceed approximately 2µg/m³ in the most affected residential parts of Camberwell village.

Four real-time PM_{10} monitors and a weather station will be established between the Ashton open cut and closest northern residence in Camberwell village. Another real-time PM_{10} monitor will need to be established on the northern side of the open cut to determine the loading of particulate matter in the incoming air flow.

The real time monitoring system will be connected by radio telemetry, linked to a central environmental control office so that decisions can be made on how mining activities will be modified to achieve air quality goals. **Table 6.1** details an air quality management protocol for the Ashton Coal Project. Adherence to the protocol would ensure that active mining operations do not cause 24 hour PM_{10} concentrations in the village of Camberwell to exceed the most stringent PM_{10} criteria.

TABLE 6.1
SUGGESTED AIR QUALITY MANAGEMENT PROTOCOL

Measured PM10 concentration Camberwell network	Wind direction in the sector 270 clockwise to 360 degrees – village potentially affected by the mine.	Wind sector 360 clockwise to 270 degrees Village not affected by mine.
If running average of preceding 1-hour PM10 > 200 $\mu g/m^3$	Relocate out-of-pit overburden operations to northern dump area. Suspend all pit operations leading to visible dust leaving the pit.	No restrictions.
If running average of preceding 1-hour average > 300 $\mu g/m^{3.}$	No out-of-pit overburden operations permitted. Suspend all pit operations leading to visible dust leaving the pit.	No restrictions.
If running average of preceding 1-hour average > 400 $\mu g/m^{3.}$	Suspend all dust generating activities.	No restrictions.
If running average of preceding 24-hour average > 50 $\mu g/m^{3.}$	Suspend all dust generating activities.	Suspend all dust generating activity.

Passive dust sources are namely exposed areas capable of generating wind erosion dust need to be minimised. Exposed areas which are not in active use will be sealed with a PVA binding material. Rehabilitation and grassing of exposed areas will be undertaken progressively throughout the operation.

Mine traffic will use well defined routes, which will minimise the area subject to mechanical disturbances. Watering of the exposed areas will be undertaken 24 hours a day, as required. Traffic will only travel on watered routes.

6.3 Noise and Vibration

The study has revealed that noise impacts are likely to occur during some construction, operational phases and during adverse weather conditions. These are discussed in **Section 5.3**. No exceedences of EPA criteria have been predicted for blasting or rail transport of coal. Measures which have been identified to avoid exceedences are summarised below:

- Dumping of overburden at low level (<RL 115) on the *eastern end* of the eastern emplacement will not occur when the wind speed is in the range 1 - 3m/s and the direction of wind origin lies in the quadrant between west and north. During these wind conditions, low level dumping should occur at the western end of the eastern emplacement. An alternative of this option is to select mobile plant with sound power levels not exceeding 114 dB(A);

- If the sound power level of mobile plant is greater than 114 dB(A), dumping of overburden at high level (>RL 115) on the eastern emplacement should not occur when the wind speed is in the range 0.5 - 3m/s and the direction of wind origin lies in the sector between west and northeast. High level dumping should not occur during inversions;

- Dumping of overburden at low level (<RL 100) on the western emplacement should not occur when the wind speed is in the range 0.5 - 3m/s and the direction of wind origin lies in the sector between southwest and north; and

- Dumping of overburden at high level (>RL 100) on the western emplacement should not occur when the wind speed is in the range 0.5 - 3m/s and the direction of wind origin lies in the sector between southwest and north. High level dumping should not occur during inversions.

To ensure the effectiveness of the recommended operational controls in the reduction of noise, the Ashton Coal Project will establish a weather station to access instantaneous meteorological data, specifically wind speed, direction and temperature gradient strength. This information will be relayed to a central environmental control office, decisions can be made on how mining activities will be modified or suspended to achieve noise goals.

Measures for site equipment include:-

- Trucks with a low level of sound emission will be acquired and maintained in good order;

- Primary and secondary crushers will be selected or modified so that their *individual* sound power output does not exceed specified levels. Noise compliance testing of the crushers, washery, vent fan and conveyor drive will be conducted upon commissioning of these items; and

- The use of conventional reversing beepers should be avoided on the east emplacement when the wind speed is in the range 0.5 - 3m/s and the direction of wind origin lies in the sector between west and north. Reversing beepers should be allowed at any time on the east emplacement if it can be demonstrated that they are not causing a noise disturbance.

It will be necessary to validate the predicted levels presented in the Noise and Vibration assessment contained in **Appendix G** of **Volume 2**, and possibly refine the limiting atmospheric parameters, through a rigorous noise monitoring program. Recommendations for the noise monitoring program include:-

- Noise compliance monitoring for the construction and open-cut phases of the Ashton Coal Project be fully manned, as opposed to the common practice of using unattended noise loggers, due to the abundance of extraneous noise sources in the area. Monitoring to be conducted on a monthly basis for the first 12 months of the project and then revert to quarterly monitoring after this time;

- That a weather station be established outside the village of Camberwell to measure wind speed, wind direction and the potential for temperature inversions; and

- A blast monitoring system be installed to record blast overpressure and ground vibration levels emanating from the Ashton open cut mine. As a minimum, field units should be installed at the most sensitive point adjacent to the rail line and at the nearest residence in Camberwell village and should record data for every blast.

A blasting protocol addressing such issues as notifying Camberwell residents times of blasts, road closures and results of monitoring should be prepared in accordance with relevant guidelines, and approved prior to commencement of operations.

The noise and vibration assessment has shown that EPA noise and vibration criteria for the Ashton Coal Project can be achieved if the above recommendations are implemented.

6.4 Diversion of Bowmans Creek

As mine subsidence may cause cracking which could extend to the surface and thereby permit significant water inflow into the underground workings, it will be necessary to divert Bowmans Creek outside of the projected limit of subsidence.

The diversion has been designed to accommodate a 1 in 100 year flood event in Bowmans Creek, thereby minimizing the potential for floodwaters to spread out over the underground mine workngs. It has also been designed to inhibit the back flow of water from the Hunter River should a 1 in 100 flood occur in that watercourse.

The diversion is located outside of the limit of subsidence from the underground mine thereby minimising the potential for any hydraulic connection between the two. A 0.3m thick clay layer will be provided around the diversion channel to further inhibit the potential for hydraulic connection.

The alignment of the diversion channel incorporates a number of meanders to mimic the pool and riffle effect seen in the present creek. It will dissipate stored energy in a manner similar to the present creek and replicate the ecosystem. The diversion will be further enhanced by instream wetland plantings as well as a combination of native grasses, shrubs and trees to create a sustainable riparian environment. Rock weir type drop structures and rock ramp riffle structures will be constructed to create the pond effect whilst maintaining migration passages for fish and other aquatic animals. All of this work will be constructed well in advance of the need to divert water so that sufficient time is available to stabilise the ecosystem along the diverted creek.

6.5 Surface Water

Surface water management structures have been designed on the basis that clean waters from undisturbed areas will be collected and kept separate from dirty water run-off. This clean water will

be stored in catch dams and may be allowed to discharge into Bowmans Creek in times of net water surplus or will be used as process water in times of a net water deficit. All dirty water collected from operational on disturbed areas will be collected and used in the process system.

Careful attention will be given to surface water management in the subsidence area associated with the underground mine. Considerable potential exists for subsidence to create pools of water on the surface, so it will need to be examined on a regular basis and drainage channels kept viable.

6.6 Groundwater

The underground mine and to a lesser extent the open cut mine will receive in flows from the local groundwater aquifers. This will create a local depression in groundwater profiles but should be limited in extent and have minimal effect on the known wells and bores in the area which are will outside the expected zone of influence. The proponent will undertake corrective measures on any well or bore adversely affected by the project.

Care has been taken to ensure that the underground mine will not cause subsidence cracking through to the alluvials connected with the Hunter River or Glennies Creek, but some minor seepage will occur. Recharge of the alluvials is well within the capability of the surface flows in both water courses.

6.7 Rehabilitation of the Site

To ensure successful management and rehabilitation of Ashton Coal Project land, a Sustainable Landscape Management Plan (SLMP) will be compiled and implemented as recommended in the soil and land capability assessment contained in **Appendix I** of **Volume 2**. The SLMP will address the following issues:-

- Matters pertaining to final land use;
- Handling of topsoils;
- Collection of seed material;
- Use of over burden in the rehabilitation program;
- Sediment and erosion control;
- Control and management of both noxious and environmental weeds;
- Management of feral animals;
- Fire management;

- Final topography; and

- Progressive rehabilitation and revegetation of the site.

6.7.1 Topsoil Handling

An integral part of the land use, both in the preparation and rehabilitation of the site resulting in final land use, is the availability, handling and storage of topsoil material. The suitability of the material is the function of the physical, chemical and biological characteristics of the soil. The combination of these factors will impact the depth of the soil removed and the handling of the differing layers of this material and involve the following:-

- Bunds will be constructed and capped with local soils. These soils have the greatest propensity for native seed load and endemic plant nutrient requirements due to the absence of previous agricultural practices and grass weed species;

- Topsoils from the native tree covered areas will be stripped and stored separately from the areas of pasture or weed infestation;

- It is not recommended to use soils with high salinity readings for topdressing. If this can not be avoided, salt tolerant species will be planted;

- Topsoil handling will be minimized therefore maintaining the soils chemical, physical and biological characteristics; and

- Where possible topsoil will be directly respread. Stockpiles will be located away from drainage lines and will be stabilised.

6.7.2 Cleared Vegetation

Any vegetative material cleared from the site, including fallen trees and understorey species, should be utilised where ever possible for mulch and ground cover, in areas where topsoils have been respread. Other opportunities for the spread of vegetative material include the banks of the realigned sections of Bowman Creek which will assist in the creation of riparian habitat. Vegetative material may also be utilised in the stream bed of Bowmans Creek to recreate snags in the water course and enhance habitat values.

6.7.3 Weeds

Any site of soil disturbance provides an opportunity for the colonisation by weed species, both noxious and environmental. The final land use includes in part open grassland suitable for grazing. These open grassland areas will need to be monitored and strategically managed to prevent the introduction of pasture weed species including Prickly and Tiger Pear, and Purple Top all of which

are known to occur in the locality.

In the areas returning to tree cover, the monitoring and management of weed species would need to focus on the eradication of introduced grass and ground cover species including Galenia, Prickly and Tiger Pear and thistle species.

The incidence of noxious weeds across the site as listed by the NSW Department of Agriculture, will also require control, in accordance with legislative requirements.

6.7.4 Revegetation

The predominate focus of revegetating the project area is to increase the areas of native habitat , with particular emphasis on areas of riparian vegetative cover and tree cover along the ridge lines. Areas suited for agriculture will be utilised for the most appropriate purpose including irrigated pastures and pasture improvement.

The conceptual layout of post mining vegetation cover is shown in **Figure 4.21** with detailed plans being provided in the Ashton Coal Project SLMP. The proposed species list for rehabilitation of the site is provided in Table 8 of **Appendix I** of **Volume 2.**

6.7.5 Final Void

The proposed conceptual design, of the final void, will result in a dish like structure with the base of the void being approximately 70-80m in elevation, with the slope of the batter reaching up to 110m. The sides of the void may have a slope of up to 18°. The material used for filling the void will be saline overburden.

This combination of factors, will create a low lying area in the centre of the void, which has steeply sloping sides, with the site having a potential for high to very high water and soil salinity readings.

To address these issues, specific consideration has been given to sourcing the topdressing material, the use of soil ameliorants. Selection of appropriate plant species for the cover cropping and revegetation of this site combined with the extensive use of sediment and erosional controls.

As a contingency measure, should the overburden topdressing have qualities, which would severely limit the growth of plant material, topdressing material will be sourced from other areas across the Ashton site.

In preparation for this, in the initial phase of the mining operation, topsoil from the area of the void would be striped and stored separately on the site. During the life of the operation this stockpile would be planted with suitable native species to enhance the biological qualities of the soil and replenish the native seed load.

6.8 Flora, Fauna and Aquatic

6.8.1 Flora and Fauna

Trees or shrubs, which will be used in landscape plantings as a visual screen, will be species common to the areas of woodland that were removed from the north-eastern woodland. Species will include the Narrow-leaved Ironbark, Grey gum and to a lesser extent the Forest Red Gum or Blakely's Red Gum. Shrub species used will include Western Boobialla, Acacia species native in the area and possibly the less common species such as Wilga.

Trees that have been felled will be stockpiled and placed in areas to be revegetated to provide cover for small terrestrial vertebrates. The value of remaining aquatic environments for native wildlife including amphibians and birds can be improved by restricting access by stock to parts of larger stock dams. This will allow aquatic and fringing vegetation to develop, increasing the value of the habitat. This will allow a smaller number of aquatic habitats to compensate for a potential loss of poorer quality habitats.

6.8.2 Aquatic

Minor Subsidence Impacts

There is a potential for water ponding from subsidence to benefit the aquatic environment. Active measures such as planting of fringing and emergent aquatic vegetation plus stabilisation of bed control structures at the up and down-stream ends of the ponds will be included. Any off-stream ponds created by subsidence which could provide habitat will be actively enhanced with riparian shade vegetation, plus fringing and emergent aquatic vegetation planting. It is also proposed to control stock access to the impoundments.

Bowmans Creek Diversion

The diversion of Bowmans Creek, including the design of the bed control structures and the incorporation of aquatic habitat attributes will be undertaken using the rehabilitation guidelines set out in Rutherford et al (2000). Indicative design dimensions for such structures are:-

- Maximum gradient change per pool riffle sequence 0.3 m;
- Riffles to have at least 1:20 gradients (which for a 0.3 m drop means a length of about 6 m. If longer riffle sequences are contemplated, resting pool sections would need to be incorporated into the riffle sequence;
- Minimum pool lengths between main riffles to be about 25 m;
- Stream beds will be of cobbles, gravel and sand to mimic the existing creek;
- Pool depths will be sufficient to prevent the growth of Cumbungi across the channel. That is

pools will have relatively steep riparian edges to limit riparian emergent vegetation to those edges;

- Pools will need to incorporate large woody debris to enhance fish habitat. The location and density of this material will mimic that of the existing creek; and

- The planting of riparian vegetation (especially river oaks) will be a high priority so that maximum shading can be achieved in the shortest time.

It is proposed to demonstrate that the diversion is operating sufficiently prior to the commissioning of the diversion. This will entail demonstrating that the diversion provides similar or better aquatic and riparian habitat attributes (including fish passage attributes) than the existing creek.

In practice this will entail allowing a specified dry weather flow to continue down the existing creek with higher flows split between the two creeks. A construction sequence to achieve this result is provided in Section 6.0 of **Appendix K** of **Volume 2**.

It is proposed to stage the operation of the diversion to minimise the loss of native fish from the existing creek. This will entail an initial meshing of the pools to eliminate the existing carp population, followed by systematic flushing of each of the pools sequentially downstream to dislodge native fish.

Rehabilitation of the Excised Section of Bowmans Creek

Long-term rehabilitation of the old Bowmans Creek alignment and of water features on the lease area will be undertaken with the aim to provide additional useful aquatic habitat. As a guide, the long-term rehabilitation of the old creek section will aim to convert this section to a 'chain-of-ponds' habitat type (as described in Vol. 2 of Rutherford et al 2000) fed by the rehabilitated lease site runoff.

6.9 Transportation

The proposed mine will have limited traffic impact on the New England Highway and on the local road network. Access to the mine site can be safely accommodated with the construction of an AUSTROADS type “A” intersection at the mine site entrance on Glennies Creek Road. The project will improve the surface of Glennies Creek Road between the realigned section to the New England Highway.

Other road works which will benefit the local community and employees of the mine include:-

- Improve the radius of the turn onto the New England Highway; and

- Realignment of part of Glennies Creek Road north of the proposed min entrance.

It is proposed to keep the existing northern New England Highway access open to accommodate oversize vehicle deliveries to the site. Traffic control will be utilised to accommodate the safe turning and manoeuvring of oversized vehicles into the site at this location.

All coal will be transported along internal haul roads, therefore there is no predicted impact on the public road network. Early production could be transported via private haul road to the Macquarie Generation overland conveyor belt system. A controlled intersection will be provided where the haul road crosses Brunkers Lane. Brunkers Lane has been closed to the public and is privately owned. Coal will be transported to the Port of Newcastle via rail. There is sufficient capacity at the Port of Newcastle to receive additional coal exports.

A Blasting Protocol will be prepared to ensure the safe, efficient and orderly movement of vehicular traffic occurs along the New England Highway and Glennies Creek Road and that traffic delays are minimised. The implementation of the Blasting Protocol will also ensure the integrity and safety of rail traffic using the Main Northern Railway.

6.10 Visual

The construction of environmental bunds will screen the emplacement areas from the view of residents of Camberwell and northbound highway motorists approaching the site from the south. Cross sections have been prepared to show how the view of the emplacements will be screened by these bunds.

The incorporation of environmental bunds, along both sides of the highway will restrict motorist views to the surface structures, open cut and western emplacement areas.

In addition to the physical barrier provided by the environmental bunds, it is proposed to re-vegetate the bunds with locally occurring indigenous tree, shrub and grass species and in accordance with best practice land rehabilitation. Works that will be undertaken include:-

- Construction and planting of the bunds will commence immediately the project begins;

- Rehabilitation of emplacement areas is to be undertaken progressively;

- Where possible hard, engineered surfaces, faces and edges on the bunds and emplacement areas are to be avoided. The edges of the bunds and emplacements will be “moulded” into the existing topography to eliminate any hard edges; and

- Non-reflective building materials will be used in the construction of the surface facilities including CPP infrastructure and offices. The use of greens and beige is considered appropriate.

In addition to the environmental bunds and landscape plantings described above, the following measures will also be undertaken to minimize the impacts of night lighting:

- Where safety is not compromised the use of light columns and low brightness floodlights designed to reduce stray light will be installed;

- Floodlights will be shielded to the maximum extent possible to ensure lighting is not directed towards public areas (including public roads) and private dwellings; and

- Lighting will be positioned to minimise any impact upon the village of Camberwell.

6.11 Hazards

6.11.1 Hazardous Goods Storage and Handling

All chemicals and fuels will be stored in accordance with the applicable regulations and standards. Diesel will be stored in two 25,000 litre tanks located in a bunded area adjacent to the contractors compound. The diesel storage will be designed and operated in accordance with the NSW Dangerous Goods Regulation and relevant Australian Standard.

Diesel fuel will be delivered to the tanks by a diesel road tanker. Fuel will be transferred by a truck mounted pump. Vehicles will be fuelled from a fuelling point using a fuel bowser arrangement. All fuel delivery and filling points will be bunded.

Explosives will be stored in a portable magazine that will be located close to the blast area. The magazine will store a maximum of about 500kg of detonators. The magazine will be designed and operated in accordance with the regulatory requirements (NSW DG Regs and NSW Mineral Resources Regs).

Ammonium nitrate will be stored in portable silos located near the blast zone. Silos will be positioned outside the blast zone but close enough to provide ready access for mix trucks. The silos are steel hoppers and are about 2m in diameter and 4m high. The base of the hopper is about 3m above the ground and is located on steel legs or stanchions.

6.11.2 Chemical Usage

Chemicals will be stored in areas capable of containing any spillage. A chemical register will be maintained with material safety data sheets, the provision of spill response kits and appropriate training for personnel.

6.11.3 Fire

The risk from bushfire is considered moderate. All surface facilities are located in extensively cleared areas. The area of the mine site which contains the highest proportion of trees will be cleared for open cut mining.

The potential for fire from fuel storage is low. The main fuel stored is diesel, which has a low flash point. Fuel storages will be in accordance in with Australian Standards and located at appropriate distances from occupied buildings.

6.11.4 Earthquake

The Hunter Valley has the potential to be affected by seismic activity. Buildings will be built to the appropriate building Codes which consider the likely effects of earthquake.

6.12 Spontaneous Combustion

Underground Mining

This potential is considered low for the Ashton Coal Project, however the Liddell seam has a propensity for spontaneous combustion. The ventilation system has therefore been designed to satisfy possible spontaneous combustion conditions.

Relevant design procedures will be employed wherever a seam is known or suspected to be prone to spontaneous combustion. These are based around the following:

- Minimisation of pressure differentials within the ventilation circuit/s. The major design factors here are to provide sufficient main entry development headings, as well as driving and maintaining roadways of sufficient cross-sectional area. Both of these factors assist by reducing the overall mine resistance;

- Minimisation of coal fracturing, to avoid leakage paths and heating sites; and

- Segregation of goaf areas to provide extinctive atmospheres. This generally entails the provision of separating barrier pillars between groups of longwall panels.

Coal Stockpiles

There will be 2 coal stockpiling activities associated with the Ashton Coal Project, these being the ROM coal on the floor of Arties pit, and the product coal stockpile. Generally, the risk of spontaneous combustion increases with the length of time in which the coal is left stockpiled. The ROM coal will be fed to the CPP on a continual basis, with the CPP washing coal 24 hours per day. Therefore the coal will not be left to stand in the stockpile for any length of time.

The product coal will not be left stockpiled for any length of time. The primary philosophy to manage spontaneous combustion in the product stockpile is to maintain stock rotation, with the philosophy of first on first off. The action of reclaiming coal for trainloading is sufficient to cool the coal down to prevent ignition.

6.13 Community Relations

The Ashton Coal Project will establish a community consultative committee. This will include representatives of residents of Camberwell, Singleton Council and the Ashton Coal Project. This committee will provide an interface between the mine and the local community, which enables information about the mine to be shared, and issues discussed.

It will be expected that, at times members of the local community would wish to deal on an individual basis with the project. An environmental officer will be responsible for liasing with the community. This officer will also be responsible for disseminating environmental information to the regulatory agencies.

6.14 Monitoring Programme

The proposed environmental monitoring program is outlined in **Section 4.17**.

Regular environmental monitoring for air quality, noise, vibration, surface and groundwaters, spontaneous combustion and subsidence will be established. The program will identify the location of each monitoring station and the frequency of monitoring. "Realtime" monitoring will be adopted for air quality in the village of Camberwell. This method enables the mine to determine prevailing conditions instantaneously with subsequent modification to operations as required. The monitors for the mine will be connected by radio telemetry to the environmental officers computer. This overall program will assist in the management of air, noise and vibration emissions.

A subsidence management plan will be developed for the underground mine operations. The monitoring program will assess any changes in erosional or hydrological regimes, so that potential impacts on aboriginal cultural heritage or hydrological flow can be addressed.

6.15 Greenhouse Gas Emission

Energy consumption is a significant cost in mining therefore the mine plan is generally designed to achieve minimum fuel consumption compatible with efficient operation of the mine and efficient use of capital. Thus, measures to minimise emissions are on integral part of the mine plan. Measures which will be adopted include the regular maintenance of plant equipment, promotion of car pooling and responsible use of electricity.

6.16 Landfill

There will be no impact on the landfill identified on the Camberwell common – it is proposed to place overburden (as part of the eastern emplacement) over the site, therefore further containing waste in the area.