# Notice of Modification

## Section 75W of the *Environmental Planning and Assessment Act 1979*

I modify the development consent referred to in Schedule 1, subject to the conditions in Schedule 2.

These conditions are required to:
- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring, reporting and independent review; and
- provide for the ongoing environmental management of the development.

The Hon Kristina Keneally MP
**Minister for Planning**

Sydney 5th November 2008

### SCHEDULE 1

The development consent for the Dendrobium underground coal mine and associated infrastructure granted by the Minister for Urban Affairs and Planning on 20 November 2001 (DA 60-03-2001).

### SCHEDULE 2

1. Delete Schedule 1, Schedule 2 and all subsequent text and figures and replace with the following:

**Schedule 1**

| | |
|---|---|
| **Application Number:** | DA 60-03-2001 |
| **Applicant:** | BHP Billiton Illawarra Coal Holdings Pty Limited |
| **Site:** | See Appendix 1 |
| **Development:** | Dendrobium Underground Coal Mine and associated surface facilities and infrastructure |

## TABLE OF CONTENTS

## DEFINITIONS

| | |
|---|---|
| AEMR | Annual Environmental Management Report |
| Affected councils | Wingecarribee Shire Council, Wollondilly Shire Council and Wollongong City Council |
| Applicant | BHP Billiton Illawarra Coal Holdings Pty Ltd, or its successors |
| BCA | Building Code of Australia |
| CCC | Community Consultative Committee |
| Coal washery | Dendrobium coal washery and drying facility located within the Steelworks |
| Consent | This development consent |
| Construction | The demolition of buildings or works, carrying out of works and erection of buildings covered by this consent |
| CPI | Consumer Price Index, as published by the Australian Bureau of Statistics |
| DA | Development application |
| Day | The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays |
| DECC | Department of Environment and Climate Change |
| Department | Department of Planning |
| Director-General | Director-General of Department of Planning, or delegate |
| DPI | Department of Primary Industries |
| DSC | Dams Safety Committee |
| DWE | Department of Water and Energy |
| EA | *Dendrobium Colliery Modification to Dendrobium Area 3 Environmental Assessment* (including Attachments A to I), prepared for the Applicant by Cardno Forbes Rigby and dated November 2007 |
| EIS | *Environmental Impact Statement for the Dendrobium Underground Coal Mine*, prepared for the Applicant by Olsen Environmental Consulting and dated March 2001, including the Species Impact Statement prepared by Biosis Research and dated April 2001 |
| Environmental consequences | Environmental consequences of Subsidence Impacts, including loss of surface flows to the subsurface, loss of standing pools, adverse water quality impacts, development of iron bacterial mats, cliff falls, rock falls, damage to Aboriginal heritage sites, impacts on aquatic ecology, ponding, etc |
| EP&A Act | *Environmental Planning and Assessment Act 1979* |
| EP&A Regulation | *Environmental Planning and Assessment Regulation 2000* |
| EPL | Environment Protection Licence issued under the *Protection of the Environment Operations Act 1997* |
| Evening | The period from 6pm to 10pm |
| Extended site (or site) | All land to which the development application applies, comprising the mining area, surface facilities, coal washery and the West Cliff Coal Wash Emplacement (see Appendix 1) |
| First workings | Development of main workings and gateroads to establish access within the mining area |
| Independent Dispute Resolution Process | The independent dispute resolution process as described in Appendix 5 |
| Land | Land means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval |
| KVCLF | Kemira Valley Coal Loading Facility and coal sizer |
| Kemira Valley rail line | The rail line and associated infrastructure between the KVCLF and the coal washery |
| Mining operations | First workings and second workings |
| Mining area | Area 1, Area 2, Area 3A, Area 3B and Area 3C, as shown in Appendix 2 |
| Minister | Minister for Planning, or delegate |
| MSB | Mine Subsidence Board |
| Mtpa | Million tonnes per annum |
| Night | The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays |
| Privately-owned land | Land that is not owned by a public agency, or a mining company (or its subsidiary) |
| Reasonable and feasible | Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential |

| | |
|---|---|
| | improvements. Feasible relates to engineering considerations and what is practical to build |
| Response to Submissions | The Applicant's response to issues raised in submissions, dated 24 April 2008 |
| RTA | Roads and Traffic Authority |
| ROM coal | Run-of-mine coal |
| SCA | Sydney Catchment Authority |
| Second workings | Extraction of coal from longwall panels, miniwall panels or pillar extraction |
| SMP | Subsidence Management Plan |
| Statement of Commitments | The Applicant's Statement of Commitments for Area 3A – 3C (see Appendix 4) |
| Steelworks | Port Kembla Steelworks |
| Subsidence *or* subsidence effects | Deformation of the ground mass due to mining, including all mining-induced ground movements, including both vertical and horizontal displacement, tilt, strain and curvature |
| Subsidence impacts | Physical changes to the ground and its surface caused by Subsidence Effects, including tensile and shear cracking of the rock mass, localised buckling of strata caused by valley closure and upsidence and surface depressions or troughs |
| Surface facilities | Pit top facilities, mine access drift portal, conveyors, three ventilation shafts and fans, ROM coal stockpile, Kemira Valley Coal Loading Facility, Kemira Valley rail line, access roads and all associated development allowed to be constructed under the consent |
| TARP | Trigger, Action, Response Plan |
| WCC | Wollongong City Council |
| West Cliff Coal Wash Emplacement | Stage 3 of the West Cliff Coal Wash Emplacement, located at West Cliff Coal Mine |

## SCHEDULE 2
## ADMINISTRATIVE CONDITIONS

**Obligation to Minimise Harm to the Environment**

1. The Applicant shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.

**Terms of Approval**

2. The Applicant shall carry out the development generally in accordance with the:
   (a) Development Application (DA 60-03-2001), EIS and associated submissions to the Dendrobium Underground Coal Mine Project Commission of Inquiry, and in particular its:
      - Primary Submission (the Dendrobium Project, dated 30 July 2001);
      - Submission in Reply (the Dendrobium Project, undated); and
      - Environmental Effects of Subsidence Associated with the Dendrobium Project, prepared by National Environmental Consulting Services and dated August 2001;
   (b) Modification Application dated 12 February 2002 and supporting information dated 27 January 2002;
   (c) Modification Application and supporting information dated 24 May 2002 and additional supporting information dated 14 June 2002;
   (d) Modification Application and Statement of Environmental Effects for the Dendrobium Coal Sizer, prepared by Olsen Environmental Consulting and dated March 2005;
   (e) Application for Further Approval of West Cliff Emplacement Area Stage 3, Vol 2 (including Appendices), prepared by Cardno Forbes Rigby and dated July 2007, associated Response to Submissions dated 1 November 2007 and associated Statement of Commitments dated 28 November 2007 (see Appendix 3);
   (f) Modification Application – Modification of Area 3 Footprint and Review of Conditions of Consent dated 27 November 2007, EA and associated Statement of Commitments (see Appendix 4); and
   (g) conditions of this consent.

   *Note: The general layout of the development is shown in Figure 1 of Appendix 2.*

3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.

4. The Applicant shall comply with any reasonable and feasible requirement/s of the Director-General arising from the Department's assessment of:
   (a) any reports, plans, programs, strategies or correspondence that are submitted in accordance with the conditions of this consent; and
   (b) the implementation of any actions or measures contained in these reports, plans, programs, strategies or correspondence.

**Limits on Approval**

5. Mining operations may take place in the mining area until 31 December 2030.

   *Note: Under this consent, the Applicant is required to rehabilitate the site to the satisfaction of the Director-General and DPI. Consequently this consent will continue to apply in all other respects other than the right to conduct mining operations until the site has been rehabilitated to a satisfactory standard.*

6. The Applicant shall not extract more than 5.2 million tonnes of ROM coal a year from the mining area.

7. The Applicant shall only transport coal from the surface facilities by rail.

**Staged Submission of Management Plans/Monitoring Programs**

8. With the approval of the Director-General, the Applicant may submit any management plan or monitoring program required by this consent on a progressive basis.

9. The Applicant shall ensure that monitoring programs, management plans and the Environmental Management Strategy, as in existence at the date of modification of consent in November 2008, continue to

be implemented (to the satisfaction of the Director-General) until replaced by monitoring programs and management plans approved in accordance with the conditions of this consent.

**Structural Adequacy**

10. The Applicant shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

    *Notes:*
    - *Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.*
    - *Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.*

**Demolition**

11. The Applicant shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

**Operation of Plant and Equipment**

12. The Applicant shall ensure that all plant and equipment used on site is:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient manner.

**Community Enhancement**

13. The Applicant shall contribute $0.03 per tonne of saleable coal production each financial year to fund the provision of significant present and future benefits to local communities directly affected by the development. These funds shall be:
    (a) administered and expended in accordance with procedures which are to the satisfaction of WCC and the Director-General;
    (b) provided by 30 September each year over the life of the consent;
    (c) based on saleable coal production in the previous financial year; and
    (d) indexed in accordance with the CPI, with April 2005 used as the commencement date for indexation calculations.

    Any dispute over the operation of this fund shall be referred to the Director-General for resolution.

**Costs of Management Measures**

14. The Applicant shall be responsible for the costs of all management measures (including measures to minimise, mitigate, offset or remediate impacts of the development which are not recoverable by a third party through the *Mine Subsidence Compensation Act 1961* or the *Mining Act 1991*) including but not limited to remediation of natural features, rehabilitation of ecological systems, the provision of supplementary waters and monitoring of the effectiveness of the works, as determined by the Director-General.

## SCHEDULE 3
## SPECIFIC ENVIRONMENTAL CONDITIONS – MINING AREA

### SUBSIDENCE

*Note: These conditions should be read in conjunction with the Statement of Commitments.*

**Watercourse Impact Management**

1. The Applicant shall ensure that, as a result of the development:
   (a) no rock fall occurs at Sandy Creek Waterfall or from its overhang;
   (b) the structural integrity of the waterfall, its overhang and its pool are not impacted;
   (c) cracking in Sandy Creek within 30 m of the waterfall is of negligible environmental and hydrological consequence; and
   (d) negligible diversion of water occurs from the lip of the waterfall
   to the satisfaction of the Director-General.

2. The Applicant shall ensure that underground mining operations do not cause subsidence impacts at Sandy Creek and Wongawilli Creek other than "minor impacts" (such as minor fracturing, gas release, iron staining and minor impacts on water flows, water levels and water quality) to the satisfaction of the Director-General.

   *Note: In this condition, "minor impacts" are those defined as minor triggers in Table 23.2 of the draft SMP submitted by the Applicant for Dendrobium Area 3A.*

3. The Applicant shall ensure the development does not result in reduction (other than negligible reduction) in the quality or quantity of surface water or groundwater inflows to Lake Cordeaux or Lake Avon or surface water inflow to the Cordeaux River at its confluence with Wongawilli Creek, to the satisfaction of the Director-General.

4. Prior to carrying out any underground mining operations that could cause subsidence in either Area 3A, Area 3B or Area 3C, the Applicant shall prepare a Watercourse Impact Monitoring, Management and Contingency Plan to the satisfaction of the Director-General. Each such Plan must:
   (a) demonstrate how the subsidence impact limits in conditions 1 - 3 are to be met;
   (b) include a monitoring program and reporting mechanisms to enable close and ongoing review by the Department and DPI of the subsidence effects and impacts (individual and cumulative) on Wongawilli Creek, Sandy Creek and Sandy Creek Waterfall;
   (c) include a general monitoring and reporting program addressing surface water levels, water flows, water quality, surface slope and gradient, erodibility, aquatic flora and fauna (including Macquarie Perch, any other threatened aquatic species and their habitats) and ecosystem function;
   (d) include a management plan for avoiding, minimising, mitigating and remediating impacts on watercourses, which includes a tabular contingency plan (based on the Trigger Action Response Plan structure) focusing on measures for remediating both predicted and unpredicted impacts;
   (e) address third and higher order streams individually but address first and second order streams collectively;
   (f) be prepared in consultation with DECC, SCA and DPI;
   (g) incorporate means of updating the plan based on experience gained as mining progresses;
   (h) be approved prior to the carrying out of any underground mining operations that could cause subsidence impacts on watercourses in the relevant Area; and
   (i) be implemented to the satisfaction of the Director-General.

   *Notes:*
   - *Should review by the Department of reports by the Applicant under paragraph (b) indicate that subsidence impacts have exceeded or threaten to limits imposed in conditions 1-3, then under condition 4 of Schedule 2 the Director-General may instruct the Applicant to implement reasonable and feasible requirements, which may include to cease mining within the operative longwall, shorten the length of that longwall or shorten the length and/or width of future longwalls.*
   - *Requirements under paragraphs (a) and (b) in respect of Sandy Creek and Sandy Creek Waterfall relate only to the Watercourse Impact Monitoring, Management and Contingency Plan for Area 3A.*

**Swamp Impact Management**

5. The Applicant shall ensure that subsidence does not cause erosion of the surface or changes in ecosystem functionality of Swamp 15a and that the structural integrity of its controlling rockbar is maintained or restored, to the satisfaction of the Director-General.

6. Prior to carrying out any underground mining operations that could cause subsidence in either Area 3A, Area 3B or Area 3C, the Applicant shall prepare a Swamp Impact Monitoring, Management and Contingency Plan to the satisfaction of the Director-General. Each such Plan must:
   (a) demonstrate how the subsidence impact limits in condition 5 are to be met;
   (b) include a monitoring program and reporting mechanisms to enable close and ongoing review by the Department and DPI of the subsidence effects and impacts (individual and cumulative) of each Area 3A longwall on Swamp 15a;
   (c) include a general monitoring and reporting program addressing surface water levels, near-surface groundwater levels, water quality, surface slope and gradient, erodibility, flora and ecosystem function;
   (d) include a management plan for avoiding, minimising, mitigating and remediating impacts on swamps, which includes a tabular contingency plan (based on the Trigger Action Response Plan structure) focusing on measures for remediating both predicted and unpredicted impacts;
   (e) address headwater and valley infill swamps separately and address each swamp individually;
   (f) be prepared in consultation with DECC, SCA and DPI;
   (g) incorporate means of updating the plan based on experience gained as mining progresses;
   (h) be approved prior to the carrying out of any underground mining operations that could cause subsidence impacts on swamps in the relevant Area; and
   (i) be implemented to the satisfaction of the Director-General.

   *Notes:*
   - *Should review by the Department of reports by the Applicant under paragraph (b) indicate that subsidence impacts have exceeded or threaten to exceed limits imposed in condition 5, then under condition 4 of Schedule 2 the Director-General may instruct the Applicant to implement reasonable and feasible requirements, which may include to cease mining within the operative longwall, shorten the length of that longwall or shorten the length and/or width of future longwalls.*
   - *Requirements under paragraphs (a) and (b) relate only to the Swamp Impact Monitoring, Management and Contingency Plan for Area 3A.*

**Subsidence Management Plans**

7. Prior to carrying out any underground mining operations that could cause subsidence in either Area 3A, 3B or 3C, the Applicant shall prepare a Subsidence Management Plan (SMP) to the satisfaction of the Director-General and the Director-General of DPI. Each such SMP must:
   (a) integrate ongoing management of Areas 1 and 2;
   (b) integrate the Watercourse and Swamp Impact Monitoring, Management and Contingency Plans required under conditions 4 and 6;
   (c) include monitoring of subsidence effects;
   (d) include a SCA Assets Protection Plan;
   (e) include monitoring, management, and contingency plans for all other significant natural features and all significant man made features which may be impacted by subsidence, including:
      - landscape (including cliffs and steep slopes);
      - groundwater (see condition 13);
      - terrestrial flora and fauna and ecology (including all threatened species assessed as being likely to be significantly affected by the development and their habitats);
      - Aboriginal and other cultural heritage (see condition 12); and
      - electrical, communications and other infrastructure;
   (f) be prepared in consultation with DECC, SCA and DPI;
   (g) be approved prior to the carrying out of any underground mining operations that could cause subsidence in the relevant Area; and
   (h) be implemented to the satisfaction of the Director-General and the Director-General of DPI.

   *Notes:*
   - *The SCA Assets Protection Plan required under this condition must also be prepared and implemented to the satisfaction of the SCA.*
   - *The contingency plans required under paragraph (e) must address remediation (as appropriate) and be based on a TARP structure.*

8. The SMPs prepared under condition 7 for Areas 3B and 3C must:
   (a) include a mine plan for the relevant Area;
   (b) include a detailed subsidence impact assessment, clearly setting out all predicted subsidence effects, subsidence impacts and environmental consequences;
   (c) include a minimum of 2 years of baseline data, collected at appropriate frequency and scale, for all significant natural features;
   (d) identify and assess the significance of all natural features located within 600 m of the edge of secondary extraction;
   (e) distinguish between, clearly describe and adequately quantify all subsidence effects, subsidence impacts and environmental consequences;
   (f) propose limits on subsidence impacts and environmental consequences to be applied within the relevant Area;
   (g) be otherwise prepared in accordance with any guidelines for SMPs developed by the Department and/or DPI;
   (h) be approved prior to the carrying out of any underground mining operations that could cause subsidence in the relevant Area; and
   (i) be implemented to the satisfaction of the Director-General and the Director-General of DPI.

   *Note: In approving an SMP, the Director-General may impose conditions containing subsidence impact limits (similar to conditions 1- 3 & 5), subsidence management mechanisms (similar to conditions 4 & 6) or other conditions.*

**End of Panel Reporting**

9. Within 4 months of the completion of each longwall panel, or as otherwise permitted by the Director-General, the Applicant shall:
   (a) prepare an end-of-panel report:
      - reporting all subsidence effects (both individual and cumulative) for the panel and comparing subsidence effects with predictions;
      - describing in detail all subsidence impacts (both individual and cumulative) for the panel;
      - discussing the environmental consequences for watercourses, swamps, water yield, water quality, aquatic ecology, terrestrial ecology, groundwater, cliffs and steep slopes; and
      - comparing subsidence impacts and environmental consequences with predictions; and

   (b) submit the report to the Department, DPI, SCA, DECC, DWE and any other relevant agency to the satisfaction of the Director-General.

10. The Applicant shall include a comprehensive summary, analysis and discussion of the results of monitoring of subsidence effects, subsidence impacts and environmental consequences in each AEMR.

    *Note: Conditions 9 and 10 apply to Area 2, as well as to Areas 3A, 3B and 3C.*

**Subsidence Expert Assessments**

11. The Applicant shall pay the reasonable costs of the Department in engaging independent experts to advise it when it assesses SMPs prepared under condition 7 for Areas 3B and 3C.

**ABORIGINAL HERITAGE**

12. The SMPs prepared under condition 7 must include an Aboriginal Heritage Plan, which must include a:
   (a) description of known Aboriginal heritage sites;
   (b) protocol for the ongoing consultation and involvement of the Aboriginal community in the conservation and management of Aboriginal heritage;
   (c) description of the measures that would be implemented to protect Aboriginal sites generally, including measures that would be implemented to secure, analyse and record sites at risk of subsidence;
   (d) description of the measures that would be implemented to protect Aboriginal site 52-2-1646, including:
      - a full recording and assessment of the site's rock art;
      - a more detailed subsidence assessment for the site;
      - measures which seek to avoid any significant impact on the site and any necessary contingency plans to protect the site against collapse or substantial impact on its rock art; and

   (e) description of the measures that would be implemented if any new Aboriginal objects or skeletal remains are discovered during the development.

**GROUNDWATER MONITORING PROGRAM**

13. The SMPs prepared under condition 7 must include a Groundwater Monitoring Program, which must include:
    (a) proposals to develop a detailed regional and local groundwater model, with special reference to flows to and from nearby water storages;
    (b) detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality;
    (c) groundwater impact assessment criteria;
    (d) a program to monitor the impact of the development on:
        - groundwater levels, yield and quality (particularly any potential loss of flow to, or flow from, SCA water storages);
        - coal seam aquifers and overlying aquifers; and
        - groundwater springs and seeps; and
    (e) consideration of the requirements of the latest version (or subsequent replacement) of SCA's *The Design of a Hydrological and Hydrogeological Monitoring Program to Access the Impacts of Longwall Mining in SCA Catchment*.

**ENVIRONMENTAL OFFSETS**

14. The Applicant shall provide suitable offsets for loss of water quality or loss of water flows to SCA storages, clearing and other ground disturbance (including cliff falls) caused by its mining operations and/or surface activities within the mining area, unless otherwise addressed by the conditions of this consent, to the satisfaction of the Director-General. These offsets must:
    (a) be submitted to the Director-General for approval by 30 April 2009;
    (b) be prepared in consultation with SCA;
    (c) provide measures that result in a beneficial effect on water quality, water quantity, aquatic ecosystems and/or ecological integrity of SCA's special areas or water catchments.

## SCHEDULE 4
## SPECIFIC ENVIRONMENTAL CONDITIONS – SURFACE FACILITIES

### NOISE

#### Noise Impact Assessment Criteria

1. The Applicant shall ensure that the noise generated at the surface facilities does not exceed the noise impact assessment criteria in Table 1 at any residence on privately-owned land, or on more than 25% of any privately-owned land. The applicable criteria for any residence not listed in Table 1 shall be the criteria applying at the nearest listed residence.

*Table 1: Noise impact assessment criteria dB(A)*

| ***Day*** | ***Evening*** | ***Night*** | | ***Residence*** |
|---|---|---|---|---|
| $L_{Aeq(15\ min)}$ | $L_{Aeq(15\ min)}$ | $L_{Aeq(15\ min)}$ | $L_{A1(1\ min)}$ | *(as shown in the Noise Monitoring Program)* |
| 42 | 42 | 38 | 48 | **R2** |
| 41 | 41 | 40 | 50 | **R22** |
| 40 | 40 | 39 | 49 | **R1** |
| | | | | **R9** |
| | | | | **R15a** |
| 40 | 40 | 37 | 47 | **R3a** |
| | | | | **R5a** |
| | | | | **R6a&b** |
| 37 | 35 | 35 | 45 | **R39a** |

*Notes:*

- *To determine compliance with the $L_{Aeq(15\ minute)}$ limit, noise from the development is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the development is impractical, DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
- *To determine compliance with the $L_{A1(1\ minute)}$ limit, noise from the development is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the development is impractical, DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*
- *The noise emission limits identified in the above table apply under meteorological conditions of:*
  - *wind speeds of up to 3 m/s at 10 metres above ground level ; or*
  - *up to 3°C/100 m temperature inversion strength for all receivers, plus a 2 m/s source-to-receiver component drainage flow wind at 10 metres above ground level for those receivers where applicable.*
- *These limits do not apply if the Applicant has an agreement with the relevant owner/s of these residences to generate higher noise levels, and the Applicant has advised the Department and DECC in writing of the terms of this agreement.*

#### Land Acquisition Criteria

2. If the noise generated at the surface facilities exceeds the relevant criteria in Table 2 at any residence on privately-owned land or on more than 25% of any privately-owned land, the Applicant shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 8 - 10 of schedule 4. The applicable criteria for any residence not listed in Table 2 shall be the criteria applying at the nearest listed residence.

*Table 2: Noise acquisition criteria dB(A)*

| ***Day*** | ***Evening*** | ***Night*** | ***Residence*** |
|---|---|---|---|
| $L_{Aeq(15\ min)}$ | $L_{Aeq(15\ min)}$ | $L_{Aeq(15\ min)}$ | *(as shown in the Noise Monitoring Program)* |
| 47 | 47 | 43 | **R2** |
| 46 | 46 | 45 | **R22** |
| 45 | 45 | 44 | **R1** |
| | | | **R9** |
| | | | **R15a** |
| 45 | 45 | 42 | **R3a** |
| | | | **R5a** |
| | | | **R6a&b** |
| 42 | 40 | 40 | **R39a** |

*Note: Noise generated by the development is to be measured in accordance with the notes to Table 1.*

**Rail Haulage Impact Assessment Criteria**

3. The Applicant shall ensure that noise generated by locomotives using the Kemira Valley rail line does not exceed the rail noise impact assessment criteria in Table 3.

*Table 3: Rail noise impact assessment criteria*

| ***Operating Condition*** | ***Measurement Conditions*** | ***Criteria*** $L_{A1(1\ min)}$ |
|---|---|---|
| Locomotive at idle, with compressor radiator fans and air conditioning operating at maximum load | Stationary 15 metre contour | 70 dB(A) |
| All other throttle settings under self-load, with compressor radiator fans and air conditioning operating at maximum load | Stationary 15 metre contour | 87 dB(A)<br>95 dB(Lin) |
| All service conditions | Up to 50 kilometres per hour, 15 metres from centreline of rail track | 87 dB(A)<br>95 dB(Lin)<br>Must be non-tonal<br>Linear noise levels must not exceed A-weighted noise levels by more than 15 dB |

*Note: All measured noise levels must be assessed for tonality in accordance with the NSW Industrial Noise Policy, unless otherwise specified.*

**Continuous Improvement**

4. The Applicant shall:
   (a) continue to investigate ways to reduce the noise generated by the development (including off-site road noise, noise and vibration impacts from the operation of the Kemira Valley rail line and maximum noise levels which may result in sleep disturbance);
   (b) continue to implement all reasonable and feasible best practice noise mitigation measures; and
   (c) report on these investigations and the implementation and effectiveness of these measures in the AEMR,

   to the satisfaction of the Director-General.

5. The Applicant shall use its best endeavours to minimise wheel squeal, brake squeal and locomotive wheel slippage arising from rail haulage on the Kemira Valley rail line.

**Additional Noise Mitigation Measures**

6. Upon receiving a written request from the owner of any residence where subsequent noise monitoring shows the noise generated by the development is 3 dB(A) greater than the noise impact assessment criteria in Table 1 (except where a negotiated noise agreement is in place) the Applicant shall implement reasonable and feasible noise mitigation measures (such as double glazing, insulation and/or air conditioning) at any residence on the land in consultation with the landowner.

   If within 3 months of receiving this request from the landowner, the Applicant and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.

**Monitoring**

7. The Applicant shall prepare and implement a Noise Monitoring Program for the development to the satisfaction of the Director-General. This program must:
   (a) be submitted to the Director-General for approval by 30 April 2009;
   (b) be prepared in consultation with DECC;
   (c) provide for quarterly attended noise monitoring and real-time noise monitoring (where appropriate) to monitor the performance of the development, especially in residential areas close to the surface facilities; and

(d) include a noise monitoring protocol for evaluating compliance with the noise impact and land acquisition criteria in this consent.

*Note: This program must expressly monitor the modifying factors referred to in the NSW Industrial Noise Policy (such as intermittency, tonality and low frequency)*

**BLASTING AND VIBRATION**

8. The Applicant is not permitted to undertake blasting operations at the surface facilities except with the prior written approval of DECC and subject to any conditions which DECC may impose.

**AIR QUALITY**

**Impact Assessment Criteria**

9. The Applicant shall ensure that dust generated by the development does not cause additional exceedances of the criteria listed in Tables 4 to 6 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land.

*Table 4: Long term impact assessment criteria for particulate matter*

| Pollutant | Averaging period | Criterion |
|---|---|---|
| Total suspended particulate (TSP) matter | Annual | 90 µg/m$^3$ |
| Particulate matter < 10 µm ($PM_{10}$) | Annual | 30 µg/m$^3$ |

*Table 5: Short term impact assessment criteria for particulate matter*

| Pollutant | Averaging period | Criterion |
|---|---|---|
| Particulate matter < 10 µm ($PM_{10}$) | 24 hour | 50 µg/m$^3$ |

*Table 6: Long term impact assessment criteria for deposited dust*

| Pollutant | Averaging period | Maximum increase in deposited dust level | Maximum total deposited dust level |
|---|---|---|---|
| Deposited dust | Annual | 2 g/m$^2$/month | 4 g/m$^2$/month |

*Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.*

**Monitoring**

10. The Applicant shall prepare and implement an Air Quality Monitoring Program for the surface facilities (excepting those surface facilities within the mining area) to the satisfaction of the Director-General. This program must:
    (a) be submitted to the Director-General for approval by 30 April 2009;
    (a) be prepared in consultation with DECC;
    (b) use a combination of high volume samplers and dust deposition gauges to monitor the performance of the development; and
    (c) include an air quality monitoring protocol for evaluating compliance with the air quality impact assessment criteria in this consent.

**METEOROLOGICAL MONITORING**

11. During the development, the Applicant shall ensure that it has a suitable meteorological station in the vicinity of the site that is generally in accordance with the requirements in the guideline *Approved Methods for Sampling of Air Pollutants in New South Wales*.

## WATER MANAGEMENT

### Discharges

12. The Applicant shall ensure all surface water discharges from the surface facilities:
    (a) meet the relevant ANZECC water quality objectives for the protection of aquatic ecosystems and water quality of existing receiving waters; and
    (b) comply with the discharge limits (both volume and quality) set for the development in any EPL.

### Water Management Plan

13. The Applicant shall prepare and implement a Water Management Plan for the surface facilities to the satisfaction of the Director-General. This plan must:
    (a) be submitted to the Director-General for approval by 30 April 2009;
    (b) be prepared in consultation with DECC, SCA and DWE by suitably qualified expert/s whose appointment/s have been approved by the Director-General; and
    (c) include a:
        - Site Water Balance;
        - Erosion and Sediment Control Plan;
        - Surface Water Monitoring Program; and
        - Surface and Ground Water Response Plan.

### Site Water Balance

14. The Site Water Balance must:
    (a) include details of:
        - sources and security of water supply;
        - water use on site;
        - water intercepted by mining operations;
        - water management on site;
        - off-site water transfers and water stored or disposed of underground;
        - reporting procedures; and
    (b) describe measures to minimise water use by the development.

### Erosion and Sediment Control

15. The Erosion and Sediment Control Plan must:
    (a) be consistent with the requirements of the *Managing Urban Stormwater: Soils and Construction Manual* (Landcom 2004, or its latest version);
    (b) identify activities that could cause soil erosion and generate sediment;
    (c) describe measures to minimise soil erosion and the potential for transport of sediment to downstream waters;
    (d) describe the location, function, and capacity of erosion and sediment control structures; and
    (e) describe what measures would be implemented to monitor and maintain the structures over time.

### Surface Water Monitoring Program

16. The Surface Water Monitoring Plan must include:
    (a) baseline data on surface water flows and quality in streams and other waterbodies that have been or could be affected by the surface facilities;
    (b) surface water quality and stream health assessment criteria, including trigger levels for investigating any potentially adverse surface water impacts;
    (c) a program to monitor the impact of the surface facilities on surface water flows and quality, stream health and channel stability; and
    (d) procedures for reporting the results of this monitoring.

### Surface and Ground Water Response Plan

17. The Surface and Ground Water Response Plan must describe what measures and/or procedures would be implemented to:
    (a) respond to any exceedances of the surface water, stream health, and groundwater assessment criteria; and

(b) mitigate and/or offset any adverse impacts on groundwater dependent ecosystems, aquatic ecosystems or riparian vegetation.

**LANDSCAPE MANAGEMENT**

**Rehabilitation**

18. The Applicant shall rehabilitate the surface facilities sites to the satisfaction of DPI. For rehabilitation works within the Metropolitan Special Area, the Applicant shall also ensure that these works are carried out to the satisfaction of SCA.

**Landscape Management Plan**

19. The Applicant shall prepare and implement a Landscape Management Plan for the surface facilities to the satisfaction of the Director-General and the Director-General of DPI. This plan must:
    (a) be submitted for approval by 30 April 2009;
    (b) be prepared by suitably qualified expert/s whose appointment/s have been endorsed by the Director-General;
    (c) be prepared in consultation with DECC and SCA; and
    (d) include a:
        - Rehabilitation Management Plan; and
        - Mine Closure Plan.

    *Note: The Mine Closure Plan may be submitted at a date agreed by the Director-General, provided that this date is at least 2 years prior to the planned cessation of mining at the site.*

**Rehabilitation Management Plan**

20. The Rehabilitation Management Plan must include:
    (a) the rehabilitation objectives for the surface facilities sites;
    (b) a general description of the short, medium and long term measures that would be implemented to rehabilitate these sites;
    (c) performance and completion criteria for the rehabilitation of these sites;
    (d) a description of how the performance of the rehabilitation works would be monitored over time to achieve the stated objectives and against the relevant performance and completion criteria;
    (e) any measures necessary to ensure that abandoned mine workings do not impact on stored waters or dams; and
    (f) details of who is responsible for monitoring, reviewing and implementing the plan.

**Mine Closure Plan**

21. The Mine Closure Plan must:
    (a) be prepared in consultation with the affected councils and CCC;
    (b) define the objectives and criteria for mine closure;
    (c) investigate options for the future use of the surface facilities sites;
    (d) include the proposed management and use of any heritage-listed buildings;
    (e) investigate ways to minimise the adverse socio-economic effects associated with mine closure, including reduction in local and regional employment;
    (f) describe the measures that would be implemented to minimise or manage the on-going environmental effects of the development; and
    (g) describe how the performance of these measures would be monitored over time.

**Bushfire Management Plan**

22. The Applicant shall prepare and implement a Bushfire Management Plan for the site, with particular reference to the mining area, in consultation with SCA and to the satisfaction of the Rural Fire Service.

**TRANSPORT**

**Rail Transport of Coal**

23. The Applicant shall ensure that trains do not travel on the Kemira Valley rail line:
    (a) between 12 midnight and 6 am, until 29 April 2010; and
    (b) between 11 pm and 6 am, from 30 April 2010

    unless written approval is obtained from DECC for emergency use of the rail line.

24. The Applicant shall record the:
    (a) date and time of each train movement on the Kemira Valley rail line; and
    (b) amount of coal transported from the KVCLF each year
    and include a comprehensive summary and discussion of the results of this monitoring in each AEMR.

**Road Transport**

25. The Applicant shall prepare and implement a Traffic Management Plan for the development to the satisfaction of the Director-General. This plan must:
    (a) be submitted to the Director-General for approval by 30 April 2009;
    (b) be prepared in consultation with the WCC, Mt Kembla Primary School and the CCC;
    (c) include traffic control measures for truck movements through residential areas, including Stones Road and its intersection with Cordeaux Road;
    (d) provide that mine shift changeover times and deliveries by heavy vehicle to the pit top facilities and KVCLF do not conflict with pick-up and drop-off times for Mt Kembla Primary School students;
    (e) provide heavy vehicle speed limits;
    (f) include a Driver's Code of Conduct to be applied to the Applicant's employees and contractors working at the development and measures for the enforcement of this code; and
    (g) include procedures for regular monitoring of compliance with this plan.

**Road Maintenance**

26. The Applicant shall enter into an agreement with SCA, to the satisfaction of the Director-General, to share the reasonable costs of maintenance of all access roads, bridges and creek crossings located on land controlled by SCA and used by the Applicant.

27. The Applicant shall establish an agreement with WCC to share the reasonable costs of maintenance of Stones Road for the life of the development. Prior to decommissioning of the mine, Stones Road must be inspected, to the satisfaction of WCC, and the road restored by the Applicant to a standard not less than its condition prior to the development's approval. If roadworks are not carried out by the Applicant within one month of being informed by WCC that these works are required under the maintenance agreement, WCC shall be entitled to carry out such maintenance work at the Applicant's cost. Any dispute over implementation of this condition is to be referred to the Director-General for resolution.

**VISUAL**

**Visual Amenity**

28. The Applicant shall minimise the visual impacts of the surface facilities to the satisfaction of the Director-General.

**Lighting Emissions**

29. The Applicant shall:
    (a) ensure that all external lighting associated with the surface facilities complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*;
    (b) take all practicable measures to mitigate off-site lighting impacts from the surface facilities;
    (c) ensure that light emitted from headlights of locomotives operating on the Kemira Valley rail line are screened from residences; and
    (d) report on the effectiveness of lighting emission controls in the AEMR
    to the satisfaction of the Director-General.

**WASTE**

30. The Applicant shall:
    (a) monitor the amount of waste generated by the development;
    (b) investigate ways to reuse, recycle, or minimise this waste;
    (c) implement reasonable and feasible measures to minimise this waste; and
    (d) report on waste management and minimisation in the AEMR
    to the satisfaction of the Director-General.

## SCHEDULE 5
## SPECIFIC ENVIRONMENTAL CONDITIONS – OTHER SITE COMPONENTS

### COAL WASHERY

#### Hot Gas Exhaust Stack Discharges

1. The Applicant shall:
   (a) ensure that the concentration of pollutants discharged from the coal dryer hot gas exhaust complies with discharge limits set for the development in any EPL;
   (b) regularly monitor the concentration of pollutants discharged from the coal dryer hot gas exhaust; and
   (c) report on waste management and minimisation in the AEMR
   to the satisfaction of the Director-General.

#### Fuel Source

2. The Applicant shall ensure the coal drying plant only uses blast furnace offgas or natural gas as fuel for the drier.

### WEST CLIFF COAL WASH EMPLACEMENT

#### Coal Washery Reject

3. The Applicant shall:
   (a) monitor the amount of coal washery reject emplaced in the West Cliff Coal Wash Emplacement;
   (b) investigate ways to reduce emplacement of coal washery reject at West Cliff, including beneficial use or improved disposal options; and
   (c) report on these matters in the West Cliff AEMR
   to the satisfaction of the Director-General.

#### Pollution Reduction Program

4. The Applicant shall develop with DECC a new Pollution Reduction Program (PRP) to be incorporated into the West Cliff Colliery's EPL. Subject to the satisfaction of DECC, the PRP shall:
   (a) include investigation, trial and implementation of appropriate strategies, technologies or works to achieve agreed water quality discharge criteria for licensed discharges from the West Cliff Colliery site with particular reference to salinity; and
   (b) cover a period of not less than five years.

#### Water Quality Monitoring Program

5. The Applicant shall review its water quality monitoring program for the West Cliff Mine in consultation with DECC and DWE and to the satisfaction of the Director-General.

#### Brennans Creek Diversion Bypass Rehabilitation Plan

6. The Applicant shall, by 30 June 2009, develop a Brennans Creek Diversion Bypass Rehabilitation Plan in consultation with DECC, DWE and DPI and to the satisfaction of the Director-General.

#### General Management of the Emplacement

7. Subject to condition 2 of schedule 2 and conditions 3- 6 above, the Applicant shall monitor and manage the West Cliff Coal Wash Emplacement as part of the Environmental Management Plan for the West Cliff Mine. Monitoring and management of the Emplacement shall be reported within the West Cliff AEMR, rather than the AEMR for this development.

8. All references in this consent (including conditions 3 – 7 of this schedule and Appendix 3) that have direct application to the West Cliff Coal Wash Emplacement shall cease to have force and effect subsequent to the grant of any project approval under Part 3A of the Environmental Planning & Assessment Act 1979 which includes the West Cliff Colliery and the West Cliff Coal Wash Emplacement Area.

## SCHEDULE 6
## SPECIFIC ENVIRONMENTAL CONDITIONS – EXTENDED SITE

### GREENHOUSE GASES & ENERGY EFFICIENCY

1. The Applicant shall prepare and implement a Greenhouse and Energy Efficiency Plan for the development. This plan must:
   (a) be prepared in consultation with DECC and generally in accordance with the Guidelines for Energy Savings Action Plans (DEUS 2005, or its latest version);
   (b) be submitted to the Director-General by 30 April 2009 for approval;
   (c) include a program to monitor greenhouse gas emissions and energy use generated by the development;
   (d) include a framework for investigating and implementing measures to reduce greenhouse gas emissions and energy use at the development;
   (e) include a research program to inform the continuous improvement of the greenhouse gas minimisation measures at the development;
   (f) describe how the performance of these measures would be monitored over time; and
   (g) report on the development's greenhouse gas emissions and minimisation measures in the AEMR to the satisfaction of the Director-General.

   *Note: The Applicant may consider the Dendrobium Mine's greenhouse gas minimisation measures within its overall greenhouse gas minimisation measures across its Southern Coalfield mines and related operations.*

2. The Applicant shall implement all reasonable and feasible measures to minimise the greenhouse gas emissions from the development to the satisfaction of the Director-General.

## SCHEDULE 7
## ADDITIONAL PROCEDURES FOR AIR QUALITY AND NOISE MANAGEMENT

### NOTIFICATION OF LANDOWNERS

1. If the results of monitoring required in Schedule 4 identify that the impacts generated by the development are greater than the relevant impact assessment criteria in Schedule 4, except where this is predicted in the documents listed in condition 2 of schedule 2 or where a negotiated agreement has been entered into in relation to that impact, then the Applicant shall notify the Director-General and the affected landowners and/or existing or future tenants (including tenants of mine-owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the criteria in Schedule 4.

### INDEPENDENT REVIEW

2. If a landowner considers the development to be exceeding the impact assessment criteria in schedule 4, except where this is predicted in the EA, then he/she may ask the Director-General in writing for an independent review of the impacts of the development on his/her land.

   If the Director-General is satisfied that an independent review is warranted, the Applicant shall within 2 months of the Director-General's decision:
   (a) consult with the landowner to determine his/her concerns;
   (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct monitoring on the land, to:
      - determine whether the development is complying with the relevant impact assessment criteria in schedule 4; and
      - identify the source(s) and scale of any impact on the land, and the development's contribution to this impact; and
   (c) give the Director-General and landowner a copy of the independent review.

3. If the independent review determines that the development is complying with the relevant impact assessment criteria in schedule 4, then the Applicant may discontinue the independent review with the approval of the Director-General. If the landowner disputes the results of the independent review then either the Applicant or the landowner may refer the matter to the Director-General for resolution.

   Where matters referred to the Director-General under this condition cannot be resolved by the Director-General within 28 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process.

4. If the independent review determines that the development is not complying with the relevant impact assessment criteria in Schedule 4, and that the development is primarily responsible for this non-compliance, then the Applicant shall:
   (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the development complies with the relevant criteria and conduct further monitoring to determine whether these measures ensure compliance; or
   (b) secure a written agreement with the landowner to allow exceedances of the relevant criteria; or
   (c) offer to acquire all or part of the landowner's land in accordance with the procedures in conditions 6-8 below

   to the satisfaction of the Director-General.

5. If further monitoring under condition 4(a) determines that the development is complying with the relevant impact assessment criteria, then the Applicant may discontinue the independent review with the approval of the Director-General.

   If further monitoring under condition 4(a) determines that measures implemented under that condition have not achieved compliance with the impact assessment criteria in schedule 4, and the Applicant cannot secure a written agreement with the landowner under condition 4(b) to allow these exceedances, then the Applicant shall, upon receiving a written request from the landowner, acquire all or part of the landowner's land in accordance with the procedures in conditions 6-8 below.

**LAND ACQUISITION**

6. Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant shall make a binding written offer to the landowner based on:
   (a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the development the subject of the development application, having regard to the:
      - existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and
      - presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the 'additional noise mitigation measures' in condition 6 of schedule 4;
   (b) the reasonable costs associated with:
      - relocating within the local government areas of the affected Councils, or to any other local government area determined by the Director-General;
      - obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and
   (c) reasonable compensation for any disturbance caused by the land acquisition process.

   If, within 28 days of the Applicant making this offer, the Applicant and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Director-General for resolution.

   Upon receiving such a referral, the Director-General shall request the President of the NSW Division of the Australian Property Institute (the API) to appoint a qualified independent valuer to:
      - consider submissions from both parties;
      - establish a fair market valuation for the land and determine reasonable costs and compensation for the acquisition, in accordance with paragraphs (a)-(c) above and any guidance or guidelines that the Director-General may prepare relating to this condition; and
      - propose any appropriate fair and reasonable terms of acquisition.

   The appointed valuer is to provide a full report and explanation of their valuation, determinations and proposed terms of acquisition to the Director-General, the Applicant and the landowner. The Director-General shall consider the report and decide whether the valuation, determinations and any proposed terms of acquisition are fair and reasonable and advise the parties accordingly.

   Within 14 days of receiving the Director-General's decision that the independent valuer's report is fair and reasonable, the Applicant shall make a written offer to purchase the land at a price and according to terms not less than set out in the independent valuer's report.

   If the Director-General is of the opinion that the valuation and/or determination is not fair and/or reasonable, they shall give notice to the parties that a further independent valuation and determination will be undertaken in accordance with this condition and duly request a further appointment by the API.

   If the landowner refuses to accept within 6 months a written offer duly made by the Applicant under this condition, then the Applicant's obligations to acquire the land shall cease, unless otherwise agreed by the Director-General.

7. The Applicant shall bear the full costs of any independent valuer's valuation, determination and report.

8. If the Applicant and landowner agree that only part of the land shall be acquired, then the Applicant shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.

## SCHEDULE 8

## ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING

### ENVIRONMENTAL MANAGEMENT STRATEGY

1. The Applicant shall prepare and implement an Environmental Management Strategy for the development to the satisfaction of the Director-General. This strategy must be submitted to the Director-General for approval by 30 April 2009, and:
   (a) provide the strategic framework for environmental management of the development;
   (b) identify the statutory requirements that apply to the development;
   (c) describe in general how the environmental performance of the development would be monitored and managed for the:
      - mining area;
      - surface facilities;
      - other site components; and
      - extended site;
   (d) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the course of the development;
      - respond to any non-compliance;
      - manage cumulative impacts; and
      - respond to emergencies; and
   (e) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development.

### ENVIRONMENTAL MONITORING PROGRAM

2. The Applicant shall prepare and implement Environmental Monitoring Programs for the:
   (a) mining area; and
   (b) surface facilities
   to the satisfaction of the Director-General. These programs must consolidate the various monitoring requirements in Schedules 3-6 of this consent into single documents, include plans showing the monitoring sites and be submitted to the Director-General by 30 April 2009.

### REPORTING

#### Incident Reporting

3. Within 24 hours of detecting the occurrence of an incident that causes (or may cause) material harm to the environment, the Applicant shall notify the Department and other relevant agencies of the incident.

4. Within 21 days of notifying the Department and other relevant agencies of such an incident, the Applicant shall provide the Department and these agencies with a written report that:
   (a) describes the date, time, and nature of the incident;
   (b) identifies the cause (or likely cause) of the incident;
   (c) describes what action has been taken to date; and
   (d) describes the proposed measures to address the incident.

#### Annual Reporting

5. By the end of September each year, and for at least 3 years following the cessation of mining at the development, the Applicant shall submit an AEMR to the Director-General, CCC and all relevant agencies. This report must relate to the previous financial year and:
   (a) identify the standards and performance measures that apply to the development;
   (b) describe the works carried out in the previous financial year;
   (c) describe the works that would be carried out in the current financial year;

(d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;
(e) include a summary of the monitoring results for the development during the past year;
(f) include an analysis of these monitoring results against the relevant:
- impact assessment criteria/limits;
- monitoring results from previous years; and
- predictions in the EIS, EA or other documents listed in condition 2 of schedule 4;

(g) identify and discuss all exceedances of consent and licence conditions and other applicable standards and performance measures;
(h) identify any trends in the monitoring results over the life of the development;
(i) identify any non-compliance during the previous year; and
(j) describe what actions were, or are being, taken to ensure compliance.

**INDEPENDENT ENVIRONMENTAL AUDIT**

6. By 31 December 2011, and every 3 years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
(a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;
(b) include consultation with the relevant agencies;
(c) assess the environmental performance of the development and assess whether it is complying with the relevant requirements in this approval and any relevant EPL or mining lease (including any strategy, plan or program required under these approvals);
(d) review the adequacy of strategies, plans or programs required under these approvals; and, if appropriate,
(e) recommend measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under these approvals.

*Note: This audit team must be led by a suitably qualified auditor and include experts in the fields of a) mine subsidence impacts and remediation and b) stream hydrology and water quality.*

7. Within 6 weeks of the completing of this audit, or as otherwise agreed by the Director-General, the Applicant shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.

8. Within 3 months of submitting the audit report to the Director-General, the Applicant shall review, and if necessary revise the strategies/plans/programs required under this consent to the satisfaction of the Director-General.

**COMMUNITY CONSULTATIVE COMMITTEE**

9. The Applicant shall maintain a Community Consultative Committee (CCC) for the development to the satisfaction of the Director-General. This CCC must be operated in general accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007*, or its latest version) to the satisfaction of the Director-General.

*Note: The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent. In accordance with the Guideline, the Committee should comprise an independent chair and appropriate representation from the Applicant, affected councils, recognised environmental groups and the general community in Mt Kembla and the area of the development.*

10. If required by the CCC, the Applicant shall establish and maintain a trust fund, or other funding arrangement that may be agreed between the Applicant and the CCC. This fund shall be:
(a) managed by the Chair of the CCC to facilitate the functioning of the CCC;
(b) used only if required for the engagement of consultants to interpret technical information and the like;
(c) provided with $8,000 per annum (indexed according to the CPI) by the Applicant for the duration of mining operations and other activities under the consent, or as otherwise directed by the Director-General;
(d) managed so that any monies unspent during each year are returned to the Applicant;
(e) managed so that the Chair of the CCC causes a record of the finances of the fund to be kept and provided to the Applicant and the Director-General at the end of each year the fund is used.

**ACCESS TO INFORMATION**

11. Within 3 months of the approval of any strategy/plan/ program required under this consent (or any subsequent revision of these strategies/plans/ programs), or the completion of the audits or AEMRs required under this consent, the Applicant shall:
    (a) provide a copy of the relevant document/s to the relevant agencies and CCC; and
    (b) put a copy of the relevant document/s on its website.

12. From 30 April 2009, and thereafter during the development, the Applicant shall:
    (a) provide a copy of this consent as may be modified from time to time on its website;
    (b) provide a comprehensive, running summary of monitoring results required under this consent on its website; and
    (c) update these results on a regular basis (at least every three months).

**APPENDIX 1**
**SCHEDULE OF DEVELOPMENT LAND – EXTENDED SITE**

| PLAN | LOT NUMBER | Site Component |
|---|---|---|
| | | |
| DP606434 | Part 1 | Coal Washery |
| | | |
| DP227274 | 1 | Kemira Valley Rail Line |
| DP1061983 | 1 | Kemira Valley Rail Line |
| DP606431 | 1 | Kemira Valley Rail Line |
| DP606430 | 1 | Kemira Valley Rail Line |
| DP41756 | 1 | Kemira Valley Rail Line |
| DP221602 | 1 | Kemira Valley Rail Line |
| DP157009 | 1 | Kemira Valley Rail Line |
| DP156521 | 1 | Kemira Valley Rail Line |
| DP602229 | 102 | Kemira Valley Rail Line |
| DP41756 | 2 | Kemira Valley Rail Line |
| DP1061983 | 2 | Kemira Valley Rail Line |
| DP157009 | 2 | Kemira Valley Rail Line |
| DP208440 | 2 | Kemira Valley Rail Line |
| DP208744 | 2 | Kemira Valley Rail Line |
| DP216637 | 25 | Kemira Valley Rail Line |
| DP214572 | 3 | Kemira Valley Rail Line |
| DP157009 | 3 | Kemira Valley Rail Line |
| DP203034 | 3 | Kemira Valley Rail Line |
| DP159797 | 3 | Kemira Valley Rail Line |
| DP203034 | 4 | Kemira Valley Rail Line |
| DP867936 | 6 | Kemira Valley Rail Line |
| DP259919 | 67 | Kemira Valley Rail Line |
| DP259919 | 68 | Kemira Valley Rail Line |
| DP432516 | 70 | Kemira Valley Rail Line |
| | | |
| DP751278 | 19 | Mining Area |
| DP196993 | 2 | Mining Area |
| DP606150 | 2 | Mining Area |
| DP751278 | 216 | Mining Area |
| DP751278 | 217 | Mining Area |
| DP751278 | 275 | Mining Area |
| DP751278 | 276 | Mining Area |
| DP751278 | 277 | Mining Area |
| DP751278 | 278 | Mining Area |
| DP751278 | 279 | Mining Area |
| DP751278 | 284 | Mining Area |
| DP751278 | 285 | Mining Area |
| DP751278 | 289 | Mining Area |
| DP751278 | 74 | Mining Area |
| DP401354 | 8 | Mining Area |
| 259 - 672 | | Mining Area |
| | | |
| | | |

| PLAN | LOT NUMBER | Site Component |
|---|---|---|
| DP196406 | 1 | Surface facilities - Kemira Valley |
| DP164689 | 1 | Surface facilities - Kemira Valley |
| DP615178 | 1 | Surface facilities - Kemira Valley |
| DP159797 | 1 | Surface facilities - Kemira Valley |
| DP41756 | 1 | Surface facilities - Kemira Valley |
| DP221602 | 1 | Surface facilities - Kemira Valley |
| DP44334 | 1 | Surface facilities - Kemira Valley |
| DP157009 | 1 | Surface facilities - Kemira Valley |
| DP156521 | 1 | Surface facilities - Kemira Valley |
| DP250762 | 11 | Surface facilities - Kemira Valley |
| DP1101896 | 11 | Surface facilities - Kemira Valley |
| DP751278 | 114 | Surface facilities - Kemira Valley |
| DP751278 | 115 | Surface facilities - Kemira Valley |
| DP751278 | 116 | Surface facilities - Kemira Valley |
| DP250762 | 12 | Surface facilities - Kemira Valley |
| DP751278 | 134 | Surface facilities - Kemira Valley |
| DP751278 | 137 | Surface facilities - Kemira Valley |
| DP751278 | 138 | Surface facilities - Kemira Valley |
| DP41756 | 2 | Surface facilities - Kemira Valley |
| DP157009 | 2 | Surface facilities - Kemira Valley |
| DP196371 | 2 | Surface facilities - Kemira Valley |
| DP157009 | 3 | Surface facilities - Kemira Valley |
| DP159797 | 3 | Surface facilities - Kemira Valley |
| DP196371 | 3 | Surface facilities - Kemira Valley |
| | | |
| DP751278 | Part 160 | Surface facilities - Nebo |
| DP751278 | Part 161 | Surface facilities - Nebo |
| DP1076092 | Part 21 | Surface facilities - Nebo |
| DP1076092 | Part 22 | Surface facilities - Nebo |
| DP751278 | Part 74 | Surface facilities - Nebo |
| | | |
| DP1055279 | Part 11 | Surface facilities - Ventilation Shafts |
| DP751278 | Part 169 | Surface facilities - Ventilation Shafts |
| | | |
| Crown Land under CCL 724 | | West Cliff Coal Wash Emplacement |

**APPENDIX 2**
**SITE MAPS OF THE DEVELOPMENT**

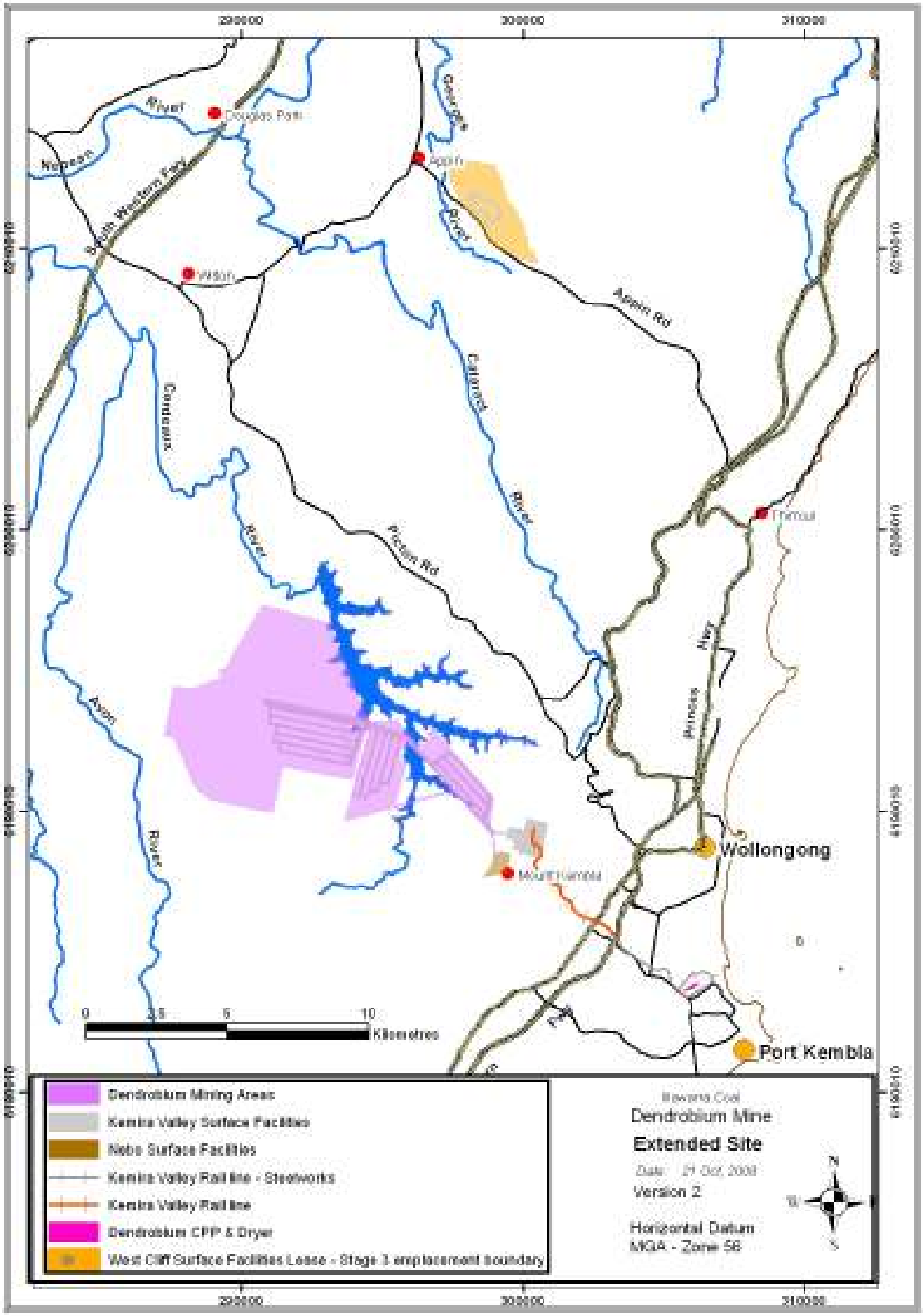


**Figure 1 – Extended Site**

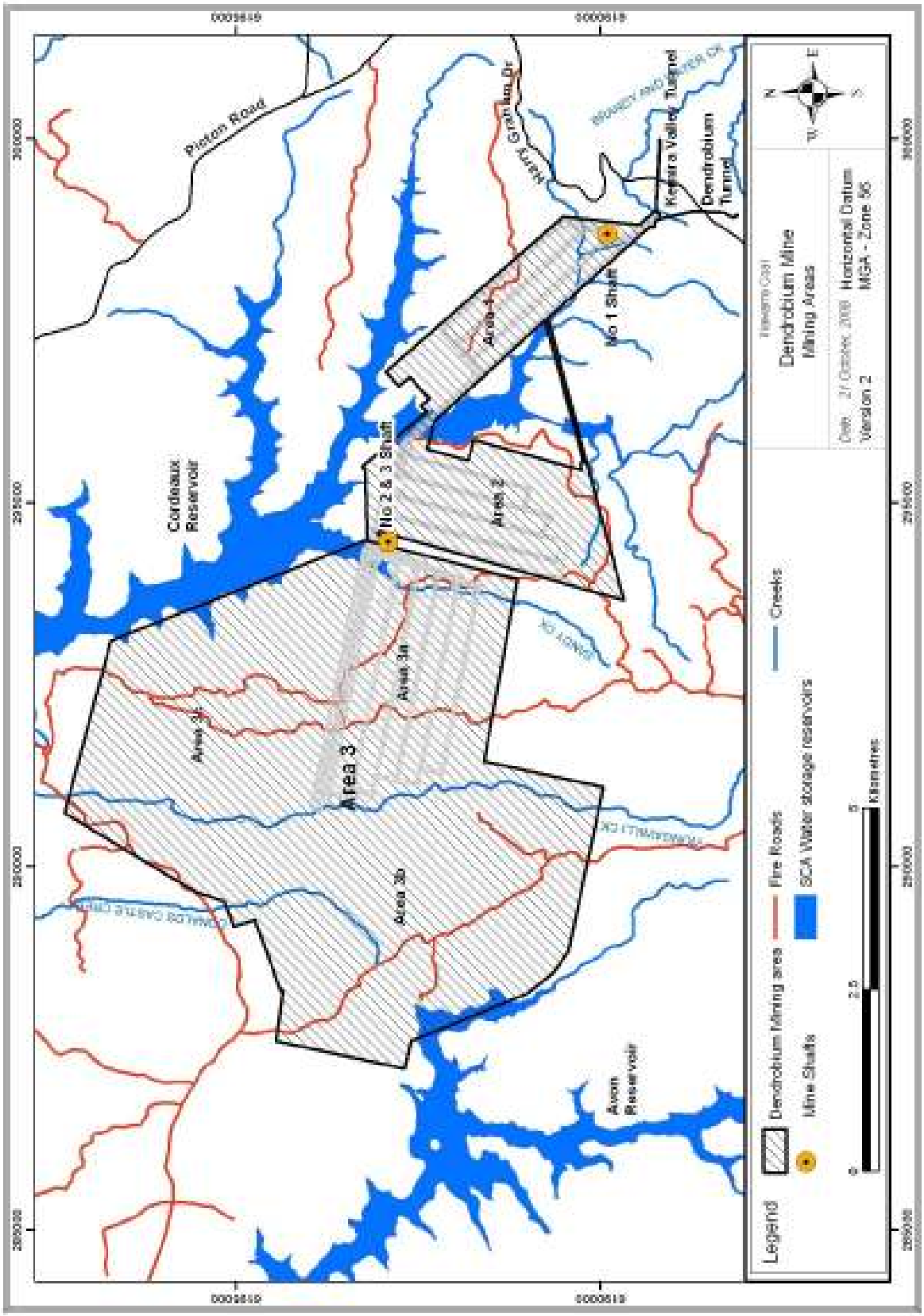


**Figure 2 – Mining Area**

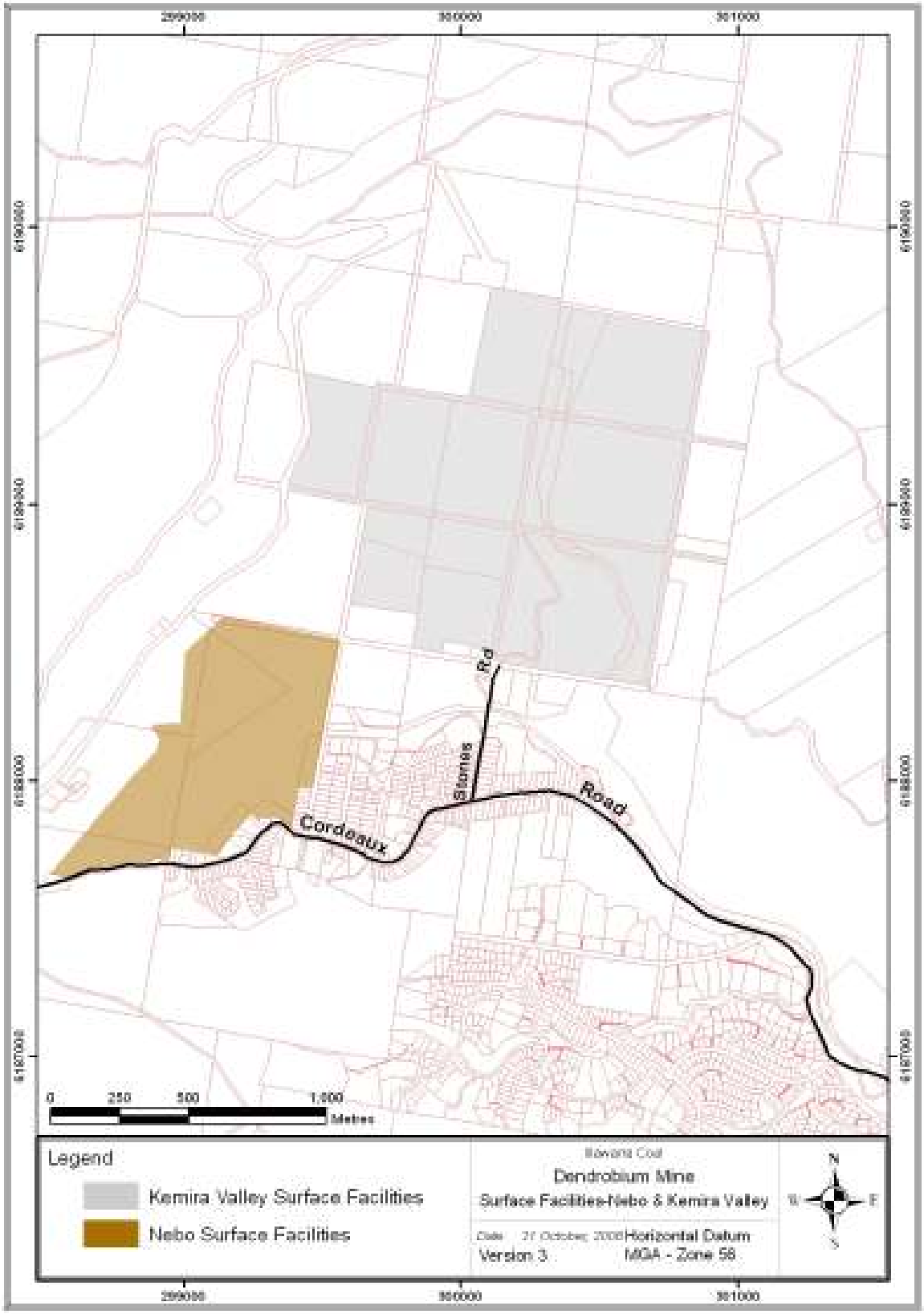


**Figure 3 – Surface Facilities**

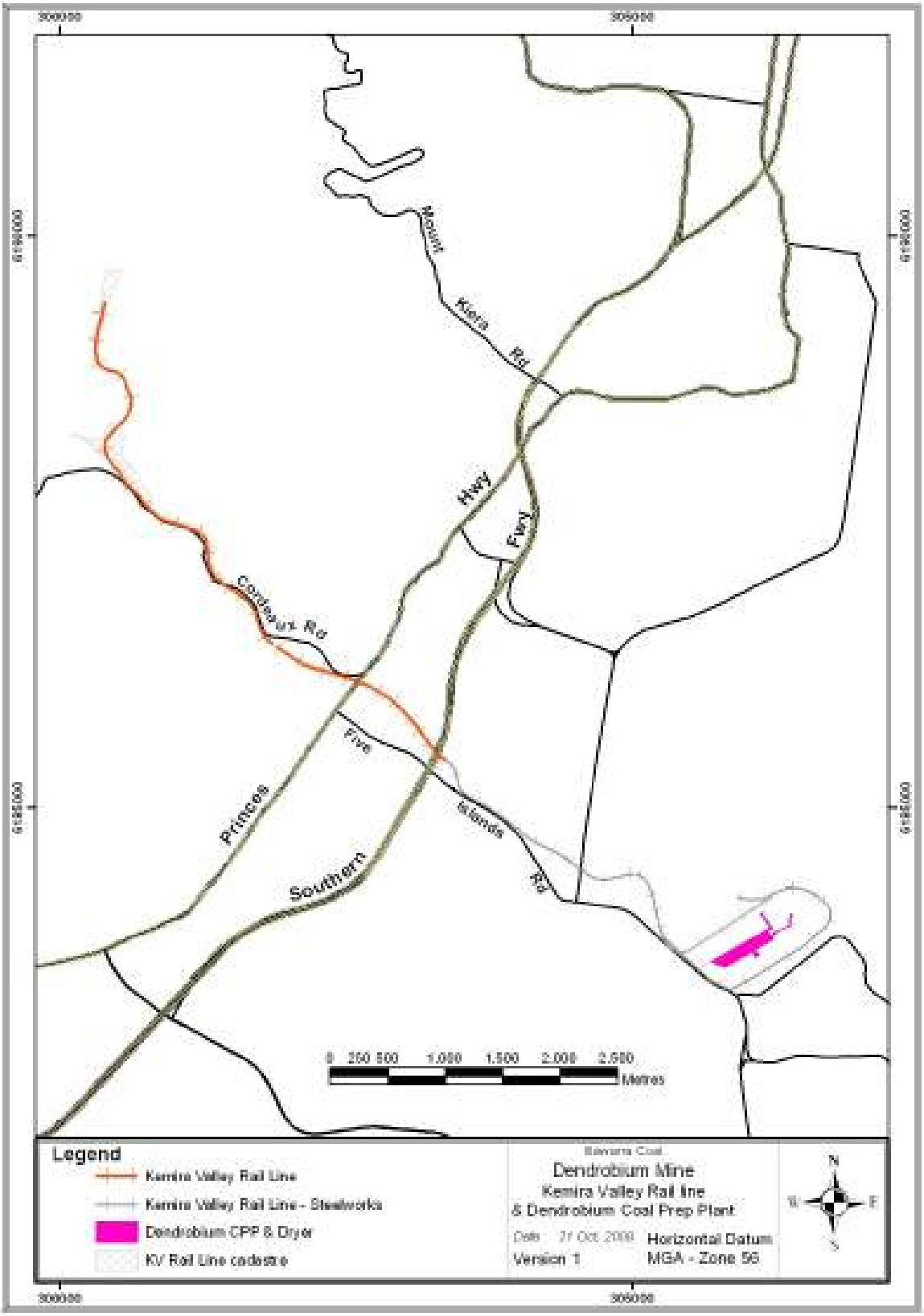


**Figure 4 – Kemira Valley Rail Line and Dendrobium Coal Washery & Drying Facility**

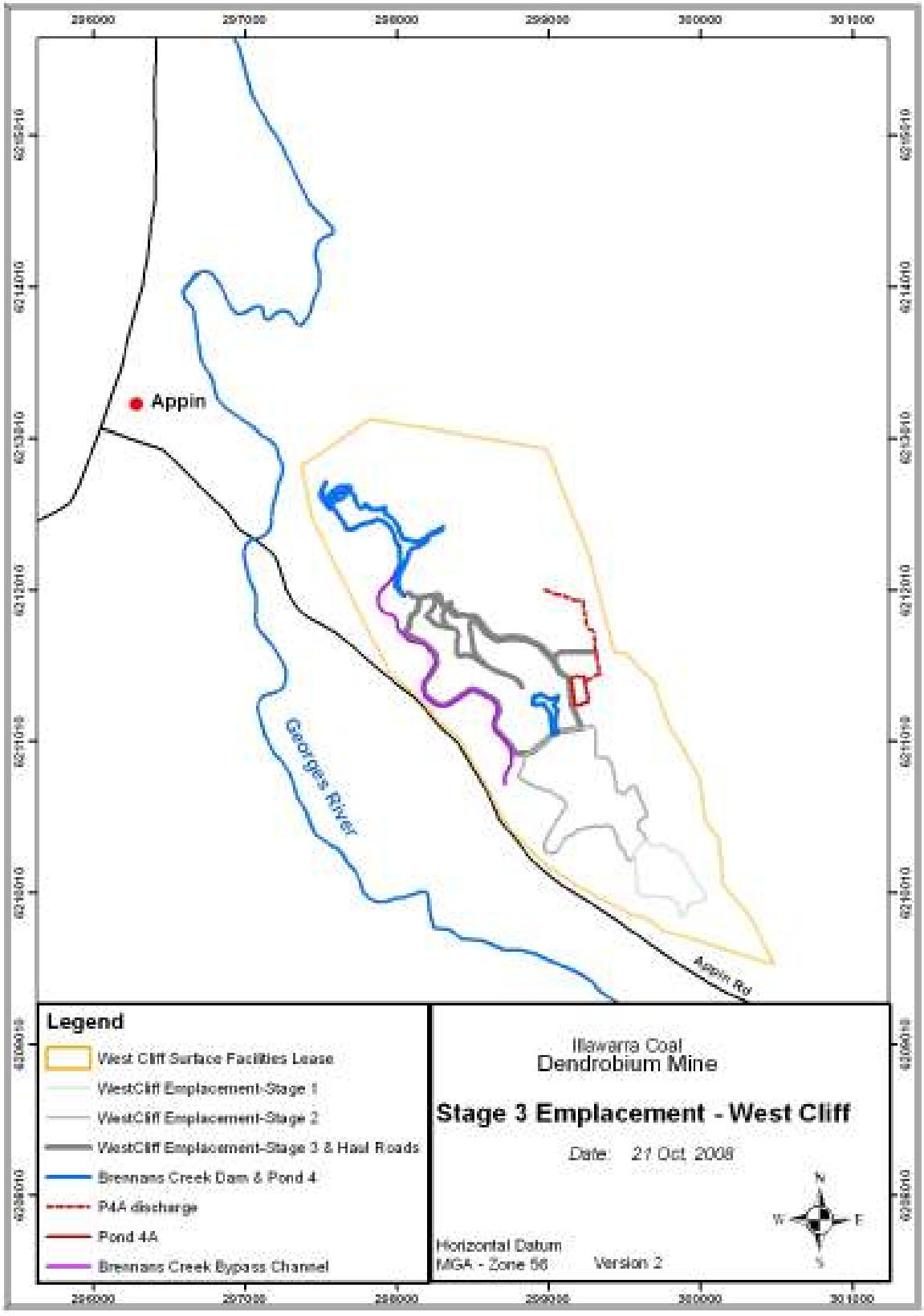


**Figure 5 – West Cliff Coal Wash Emplacement Area**

**APPENDIX 3:**
**WEST CLIFF STAGE 3 COAL WASH EMPLACEMENT**
**STATEMENT OF COMMITMENTS**

## Coal Wash Alternatives

(a) Prepare an implement an End of Resource coal wash strategy within 5 years of the issue of the Stage 3 emplacement approval issue date. The strategy should be reviewed every three years from the date of the State 3 emplacement approval. The strategy should be provided to the Department of Planning (DoP), Department of Environment and Climate Change (DECC) and Department of Primary Industries – Minerals (DPIM).

(b) Give priority to the development and implementation of coal wash management solutions and strategies that maximise the beneficial use of coal wash and offer long term, large volume and sustainable opportunities.

(c) Maximise the reuse of coal wash as fill in development sites. Reusing should be carried out in a safe, practical and commercially effective way.

(d) Report the volume of coal wash reuse and the annual progress on the development of coal wash management solutions to the Government via the West Cliff Colliery Annual Environment Management Report (AEMR), submitted to DPI and copied to the DoP and DECC.

## Stage 3 Emplacement

(e) The West Cliff Stage 3 Emplacement and associated infrastructure will be entirely contained within the footprint shown in Figure 1.

(f) The management and operation of the Stage 3 emplacement will be undertaken in accordance with the Emplacement Management Plan as amended from time to time in light of current best practice.

Vegetation and Fauna

(g) No more than 60.5 ha of native vegetation will be cleared for the West Cliff Stage 3 emplacement.

(h) The management of vegetation and fauna at the West Cliff site (including the Stage 3 coal wash emplacement ) will be undertaken in accordance with the Vegetation and Fauna Management Plan as amended from time to time in light of current best practice.

(i) The Vegetation and Fauna Management Plan will be implemented to achieve the following performance indicators and targets.

| Performance Indicator | Performance Target | Proposed Monitoring Methods |
|---|---|---|
| Weed management | • Zone 1; Low levels of weed infestation in soil translocation compartments.<br>• Zone 2; A reduction in weed cover of perennial exotic grasses on disturbed edges.<br>• Zone 3; Weed free condition maintained.<br>• Eradication of noxious and serious environmental weeds from the colliery. Focus particularly on *Cortaderia selloana* and *Juncus acutus*. | • Control methods used and justification<br>• Species treated and rates of herbicide application<br>• Weed density/condition of bushland mapping<br>• Inspections targeting noxious weeds |
| Success of Emplacement Area Rehabilitation (Zone1) | • Adequate regeneration of translocated communities, Exposed Sandstone Scribbly Gum Woodland and Sandstone Gully Peppermint Forest. Regeneration to reflect composition and structure of the two communities.<br>• Condition; no more than 20 per cent weed cover in translocated compartments after 2 years.<br>• 15 per cent accepted plant losses over 2 years. Additional losses to be replaced by tubestock.<br>• 50 per cent vegetative cover of compartments achieved after 2 years.<br>• The degree to which fauna, threatened or otherwise, use the rehabilitated emplacement area including constructed habitats and nest boxes. | • Permanent photographic points within translocated compartments.<br>• Monitoring vegetation quadrats in translocated patches measuring species richness, structure and composition, condition, death rates and replacement requirements, growth rates of key indicator species.<br>• Control sites to be set up in remnants.<br>• Random meanders for threatened flora that may have regenerated from translocation.<br>• Site assessments. Condition of bushland mapping.<br>• An assessment of areas regenerated per unit effort. A comparison of the environmental outcome to the type and size of the input.<br>• Soil testing (materials characterisation where revegetation fails).<br>• A BHPBIC staff member qualified and experienced in natural area restoration to project manage monitoring system. |
| Site stabilisation | • Success of translocation as per the above targets.<br>• Stabilisation of sediment and erosion control measures. | • Regular self audit and inspections including photographs of structures and the Emplacement benching, especially post storm flows. |
| Protection of Threatened Flora | • Loss of threatened plants *(Persoonia hirsuta*, *Acacia bynoeana and Pultenaea aristata)* restricted to those identified in area described by Figure 1. | • Inspections of on-site exclusion zones to ensure protection of remnant populations.<br>• Inspections and assessment of translocated *Persoonia hirsuta* (if required) |
| Protection of Threatened Fauna Habitats | • No additional losses or loss of potential habitat outside the area described by Figure 1. | • Annual habitat level surveys. |
| Phytophthora infection | • Prevention of the introduction of Phytophthora<br>• Identification of Phytophthora infection<br>• If detected, development and implementation of a Phytophthora infection control plan | • Annual soil sampling in vegetation within proximity to on site traffic (track, drainage and roadside edges) and areas of previous disturbance. If detected, further sampling from areas within the stage 3 footprint pre-construction and post construction will be undertaken. |
| Bushfire | • The entire West Cliff mine lease currently operates under a fire exclusion policy. This policy will continue.<br>• Boundary and internal fire trails and other | • Reporting by exception on the extent and intensity of unplanned bushfire. |

| Performance Indicator | Performance Target | Proposed Monitoring Methods |
|---|---|---|
| | suppression advantages will be maintained.<br>• A hot work permit system will be maintained on the site.<br>• The Rural Fire Service will be offered regular orientations of the lease site.<br>• West Cliff Colliery is not currently subject to a hazard reduction burn regime and hazard reduction burns are not planned for the site. Any future bushfire management will consider fire regimes that are appropriate to ecological requirements (including management of threatened species and their habitats) of the site. Any proposed hazard reduction activities will only be undertaken in consultation with all relevant stakeholders. | |
| Reporting | • Annual Report to be supplied to regulatory authorities addressing outcomes of the project to date in relation to the above performance targets. | • Reporting of project to regulatory authorities.<br>• Annual review of monitoring system and management methods.<br>• Adjustments made to systems and methods as required.<br>• Pro formas. |

(j) Emplacement clearing and rehabilitation actions will take place in the following manner as specified in the Vegetation and Fauna Management Plan.

**Vegetation clearing**

Pre-clearing actions

- Flagging area to be cleared and habitat features to be preserved or redistributed

Two staged vegetation clearing

- Clearing of sub-canopy vegetation first to allow fauna opportunity to move
- Relocation of any fauna species encountered during the initial clearing of non-habitat trees
- Removal of habitat trees the next day
- Relocation of any remaining fauna prior to and during clearing of habitat trees

Habitat reinstatement

- Transplanting dead stags
- Addition of habitat logs and woody debris
- Nest box use and installation
- Reconstruction of rocky outcrops
- Maintenance and monitoring

**Rehabilitation**

Pre-translocation actions

- Identify clearing compartments
- Timing of vegetation clearing
- Collection and storage of seed
- Identification and preparation of recipient sites

Soil salvage and handling

- Vegetation clearing and stockpiling
- Stripping of soil in relevant horizons

- Soil and rock stockpiling

Soil replacement

- Respreading soil horizons
- Redistribution of rocks, logs, cleared/stockpiled vegetation and habitat features on recipient sites
- Sediment and erosion control

Revegetation supplementary to soil translocation

- Direct seeding of previously collected seed
- Weed control (where necessary)

(k) The Broad headed Snake Management Plan will be implemented in three key stages including:

- Relocation of Broad headed snakes during the pre-clearing period, preferably during the winter season;
- Progressive two-stage clearing and habitat translocation;
- Monitoring and maintenance during the post-clearing period

Water

(l) All stormwater runoff storage and treatment systems will be designed to cater for a 1:10 year ARI 72 hour duration rainfall event.

(m) All emplacement stormwater runoff will be captured and treated in a *two pond in series* treatment system. The first pond will provide passive setting and the second pond chemically assisted settling. An automated chemical dosing system will be installed and operated between the first and second pond.

(Note: During the last phase of emplacement, there will be only one stormwater treatment pond available. The area of the active emplacement will be minimised during this phase.)

(n) Clean water will be separated from dirty water to minimise dirty water volumes that must be captured and treated.

(o) The Brennans Creek diversion channel will be designed and constructed to cater for a 1:100 year ARI 2 hour duration storm event.

(p) The Brennans Creek diversion channel will be rehabilitated to incorporate; riffles, pools, bedslope, channel roughness, floodplain pockets and riparian vegetation that approximate as close as possible the characteristics of Brennans Creek.

(q) Illawarra Coal will negotiate a Pollution Reduction Program (PRP) with the Environment Protection Authority that will be incorporated into the West Cliff Colliery Environment Protection Licence to investigate, trial and implement appropriate strategies, technologies or works to achieve an agreed water quality discharge criteria from Brennans Creek Dam over an agreed time period.

Final landform

(r) The emplacement final landform will be contoured to form a stable landform that is sympathetic to the surrounding landscape.

Dust

(s) The emission of dust generated at the emplacement will be minimised by the use of water spray cart.

Compensatory measure

(t) Illawarra Coal will transfer ownership of 153.4 ha of land at Bulli Tops to the Minister for the Environment and Climate Change for gazettal under the National Parks and Wildlife Act and/or the Sydney Water Catchment Management Act. This commitment also includes:
- funding the transfer costs to transfer land title from Illawarra Coal to the NSW Government;
- funding the agreed scope of site improvement works

Aboriginal cultural heritage

(u) Aboriginal cultural heritage site impacted by the Stage 3 Coal Wash Emplacement will be restricted to:

| Site | Impact |
|---|---|
| BC2 (Shelter with Art) | Destroyed by Emplacement landform |
| BC5 (Axe Gr. Groove) | Destroyed by Emplacement landform |
| BC6 (Shelter with Art) | Destroyed by Emplacement landform |
| WC4 (Shelter with Art) | Destroyed by Emplacement landform |
| BCPAD4 | Destroyed by Emplacement landform |
| BCPAD5 | Destroyed by Emplacement landform |
| BC7 (Shelter with Art) | Indirect via Landscape context – low potential for damage |
| D11 (Shelter with Artefacts) | Indirect via Landscape context – low potential for damage |

(Note: relevant s87/90 consents under the National Parts and Wildlife Act will be sought for the Aboriginal cultural heritage site impacted by the Stage 3 Coal Wash Emplacement)

(v) An Aboriginal Cultural Heritage Management Plan will be developed and implemented in consultation with relevant Aboriginal stakeholders for all sites located at West Cliff.

(w) Illawarra Coal will enter into an agreed Aboriginal Community Enhancement Program with the Tharawal Local Aboriginal Land Council.

Community consultation

(x) Illawarra Coal will continue to operate an office in a local Shopping Precinct to enable the community easy access to information and Illawarra Coal staff

(y) Illawarra Coal will continue to operate the 24-hour contact telephone line.

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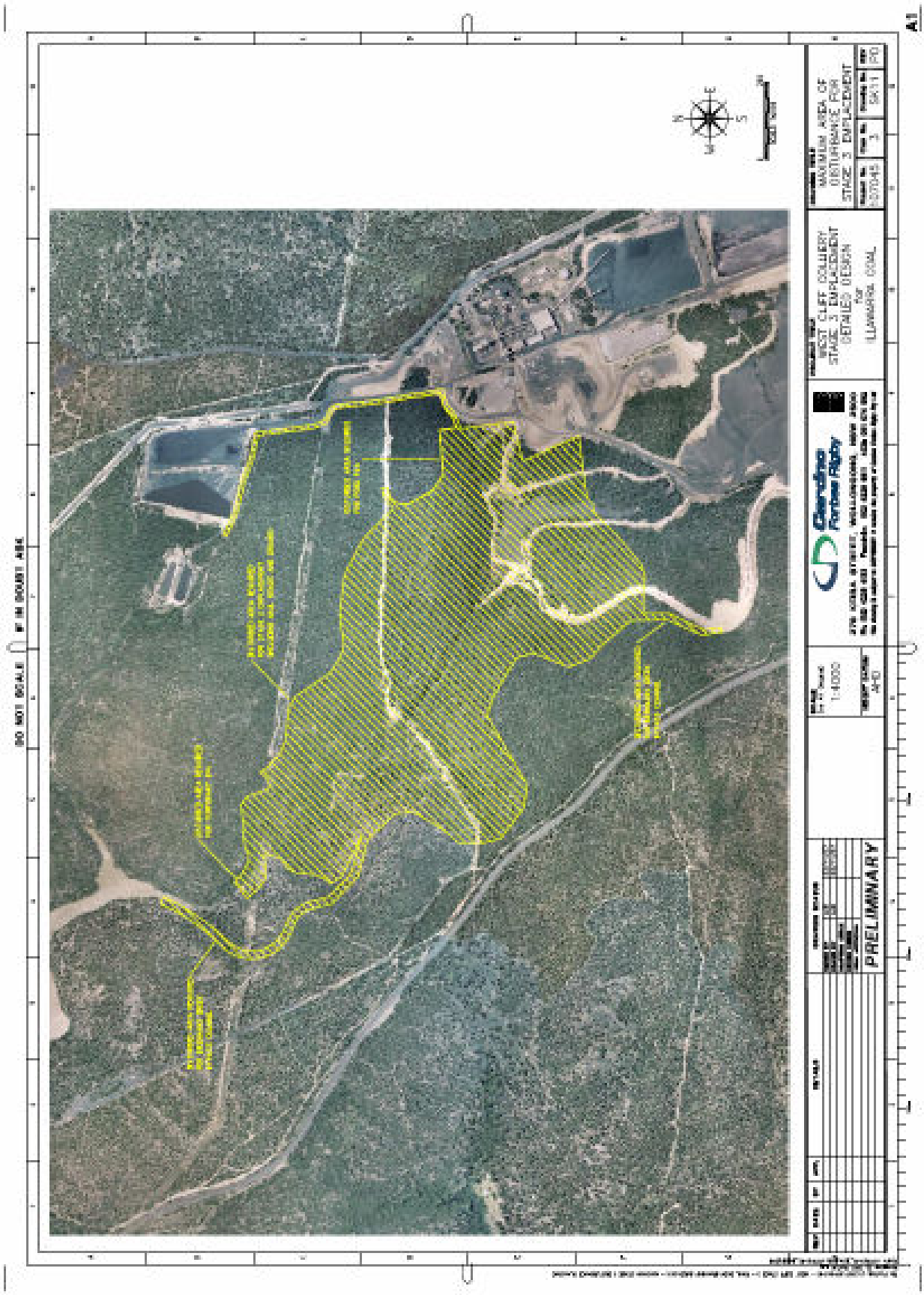
**Figure 1**: Areal extent of the Stage 3 Coal Wash Emplacement



## APPENDIX 4:
## STATEMENT OF COMMITMENTS

### Dendrobium Area 3
### Amended Statement of Commitments

### 1. Longwall layouts in Dendrobium Area 3

Optimal longwall layouts will be designed to achieve the following objectives for Dendrobium Area 3:

- Avoid fracturing in controlling rockbars of Sandy and Wongawilli Creek that is sufficient to result in water loss from pools (e.g. lower pool levels due to increased flow through controlling rockbars due to fracturing),
- Avoid fracturing in the Sandy Creek waterfall that is sufficient to result in increased water flow through the rockmass (e.g. water flowing through the rock overhang at the Sandy Creek waterfall), and
- Minimise volume of sterilised coal which could be efficiently extracted within the mining and environmental constraints of the area.

### 2. Subsidence Impact – Monitoring

Pre, during and post mining subsidence impact monitoring will be undertaken in accordance with the approved Subsidence Management Plan. The monitoring component of the Subsidence Management Plan includes but is not necessarily limited to:

- Subsidence movement of natural and man made features
- Surface waters
- Groundwater
- Terrestrial flora and fauna
- Aquatic flora and fauna
- Aboriginal cultural heritage sites
- Swamps

### 3. Subsidence Impact – Avoidance, Mitigation and Rehabilitation

If the monitoring program identifies impacts to natural features that exceed those predicted, the following contingent measures will be implemented.

| Description of Item | Key Potential Impacts | Avoidance, Mitigation and Rehabilitation |
|---|---|---|
| ***Permanently Flowing Creeks (Flow)*** | **Predicted Impacts**<br><br>Minor fracturing in the beds of Wongawilli and Sandy Creeks. | **Avoidance & Mitigation**<br><br>Not mining under Wongawilli & Sandy Creeks to avoid major fracturing and loss of surface flow. Commitment to avoid significant impacts to major natural features in Area 3b |

| Description of Item | Key Potential Impacts | Avoidance, Mitigation and Rehabilitation |
|---|---|---|
| | | and 3C |
| | Fracturing in the bed of SC10 leading to pool water level loss in some pools or loss of stream flow at some controlling rockbars. | Grouting and repair of significant surface water controlling features within SC10, where it is appropriate to do so, in consultation with SCA, DPIM, DECC and other stakeholders. |
| | **Impacts Exceeding Those Predicted** | **Contingent Measure** |
| | Major fracturing in the beds of Wongawilli and Sandy Creeks leading to pool water level loss or loss of stream flow. | Grouting and repair of significant surface water controlling features where it is appropriate to do so in consultation with SCA, DPIM, DECC and other stakeholders. |
| | Major fracturing in the bed of SC10 leading to pool water level loss in all pools or loss of stream flow at all controlling rockbars. | |
| | Major fracturing in the rockmass of Sandy Creek waterfall leading to significant flow through the rock overhang. | Grouting and repair of the waterfall rockmass where it is appropriate to do so in consultation with SCA, DPIM, DECC and other stakeholders. |
| ***Ephemeral watercourses*** | **Predicted Impacts** | **Avoidance & Mitigation** |
| ***(Flow)*** | Fracturing of the beds of some minor streams & diversion of flows. | Not mining under Wongawilli & Sandy Creeks reducing subsidence movements in the more deeply incised parts of the tributaries. Commitment to avoid significant impacts to major natural features in Areas 3B and 3C. |
| | **Impacts Exceeding Those Predicted** | **Contingent Measure** |
| | Major fracturing in the beds of streams leading to total pool water loss or complete loss of surface flow through controlling rockbars. | Grouting and repair of significant surface water controlling features where it is appropriate to do so in consultation with SCA, DPIM, DECC and other stakeholders. |
| ***Lakes*** | **Predicted Impacts** | **Avoidance & Mitigation** |
| | Negligible impacts. | The layout has been designed to avoid or minimise impacts on the lake. Potential impacts are considered negligible. |

| Description of Item | Key Potential Impacts | Avoidance, Mitigation and Rehabilitation |
|---|---|---|
| | **Impacts Exceeding Those Predicted**<br><br>Connectivity of the lake with the mining area. | **Contingent Measure**<br><br>As per the DSC Contingency Plan. |
| ***Cliffs*** | **Predicted Impacts**<br><br>Isolated rockfalls estimated to occur along ~ 10% of the cliff lines. | **Avoidance & Mitigation**<br><br>Monthly monitoring during subsidence.<br><br>Signage & Fencing where they present safety risks.<br><br>Communication strategy to stakeholders where they present safety risks. |
| | **Impacts Exceeding Those Predicted**<br><br>Rock falls occurring along >10% of the cliff lines or total cliff failure (e.g. entire length of cliff impacted). | **Contingent Measure**<br><br>As above.<br><br>Scaling rocks loosened by subsidence where they present safety risks.<br><br>Minor civil/earthworks to prevent erosions such as overland flow diversion works, establishment of banks, smoothing and re-contouring, where this is practical.<br><br>Revegetation works such as planting, seeding, mulching, weed control and plant maintenance, where this is practical. |
| ***Steep slopes*** | **Predicted Impacts**<br><br>Some impacts are possible if slopes are marginally stable.<br><br>Large cracks or compressive ridges. No significant diversion of surface water flow direction or increase in soil erosion/sedimentation of waterways. | **Avoidance & Mitigation**<br><br>Monthly monitoring during subsidence.<br><br>Signage & Fencing where they present safety risks.<br><br>Communication strategy to stakeholders where they present safety risks.<br><br>Minor sediment control works such as silt fencing. |
| | **Impacts Exceeding Those Predicted**<br><br>Large cracks, large compressive ridges or mass movements causing | **Contingent Measure**<br><br>As above.<br><br>Minor civil/earthworks to prevent erosions such as |

| Description of Item | Key Potential Impacts | Avoidance, Mitigation and Rehabilitation |
|---|---|---|
| | significant erosion if left untreated. | overland flow diversion works, establishment of banks, smoothing and re-contouring, where this is practical.<br><br>Revegetation works such as planting, seeding, mulching, weed control and plant maintenance, where this is practical.<br><br>Erosion control and revegetation establishment where required to prevent further impacts.<br><br>Infill of surface cracks with soil or other suitable material where appropriate, local regrading or compacting of the surface. Temporary sediment and erosion control measures.<br><br>Monitoring – event specific mitigation and rehabilitation. |
| ***Aquatic fauna and flora*** | **Predicted Impacts**<br><br>Impacts on fauna are possible due to 'loss' of water from pools. Impacts on vegetation expected to be very small.<br><br>**Impacts Exceeding Those Predicted**<br><br>Major reduction in pool water level or complete loss of pool water.<br><br>Major reduction in aquatic habitat for an extended timeframe or complete loss of habitat.<br><br>Identified mortality of fauna/flora in proximity to identified mining impact. | **Avoidance & Mitigation**<br><br>Not mining under Wongawilli & Sandy Creeks to avoid major fracturing and loss of surface flow.<br><br>Commitment to avoid significant impacts to major natural features in Areas 3B and 3C.<br><br>**Contingent Measure**<br><br>Grouting and repair of significant surface water controlling features where it is appropriate to do so in consultation with SCA, DPIM, DECC and other stakeholders.<br><br>Active preservation of life such as relocation of stranded fish.<br><br>Temporary ecosystem maintenance such as watering aquatic plants until final rehabilitation completed, where this is practical. |
| ***Terrestrial fauna and flora*** | **Predicted Impacts**<br><br>Impacts on fauna are possible | **Avoidance & Mitigation**<br><br>Monthly monitoring during |

| Description of Item | Key Potential Impacts | Avoidance, Mitigation and Rehabilitation |
|---|---|---|
| ***including endangered ecological communities*** | due to 'loss' of water in creeks. Proposal assessed as likely to have a significant local impact on three frog and one dragonfly species. | subsidence.<br><br>Not mining under Wongawilli & Sandy Creeks to avoid major fracturing and loss of surface flow.<br><br>Commitment to avoid significant impacts to major natural features in Areas 3B and 3C. |
| | **Impacts Exceeding Those Predicted**<br><br>Large areas of impacted vegetation (by rockfalls, soil slippage) that is unlikely to commence natural regeneration within 6 months.<br><br>Significant surface soil cracking or rock bar fracturing resulting in loss of standing water and or erosion in creeks or swamps.<br><br>Gas emissions with extensive vegetation die off and no evidence of self regeneration within 6 months of cessation of gas release. | **Contingent Measure**<br><br>Site rehabilitation to reinstate habitat values – increased monitoring.<br><br>Remediation of subsidence related fracturing or dilation within creek beds and surface cracks where it is appropriate to do so in consultation with SCA, DPIM, DECC and other stakeholders.<br><br>Minor civil/ earthworks to prevent erosions such as overland flow diversion, establishment of banks, smoothing and re-contouring, where this is practical.<br><br>Revegetation such as planting, seeding, mulching, weed control and plant maintenance, where this is practical.<br><br>Active preservation of life such as relocation of stranded fauna and watering of stressed vegetation where this is beneficial and practical.<br><br>Temporary ecosystem maintenance such as watering plants until final rehabilitation completed, where this is practical. |
| ***Aboriginal Places of Cultural Significance - Archaeological sites*** | **Predicted Impacts**<br><br>Unlikely that the sites will sustain structural impacts. Empirical data suggests the probability of impacts to a site is less than 10%. | **Avoidance & Mitigation**<br><br>Baseline, active subsidence and post mining monitoring. Appropriate consultation and approvals. |

| Description of Item | Key Potential Impacts | Avoidance, Mitigation and Rehabilitation |
|---|---|---|
| | **Impacts Exceeding Those Predicted**<br><br>Change in shelter conditions not attributable to natural weathering or preservation – cracking or exfoliation of art panel, movement of existing planes and joints at panel, block fall within shelter or overhang, shelter or overhang collapse. | **Contingent Measure**<br><br>Site and event specific mitigation and rehabilitation will be developed with appropriate Aboriginal representatives, DECC and SCA.<br><br>Techniques may involve installing artificial drip lines, detailed recording of art, stabilising and cleaning rock faces. Refer Area 3A SMP section 22.9. |
| ***Water quality–***<br><br>***Permanently Flowing Creeks***<br><br>***Wongawilli Creek***<br><br>***Sandy Creeks***. | **Predicted Impacts**<br><br>Impacts on water quality are possible due to reduced flow and/or increased interaction of ground and surface water. These impacts are likely to include reduced oxygen, higher dissolved ions and precipitates. There is also a possibility of lower pH and lower temperature variation as a result of groundwater inflows. | **Avoidance & Mitigation**<br><br>Not mining under Wongawilli & Sandy Creeks to avoid major fracturing and loss of surface flow.<br><br>Commitment to avoid significant impacts to major natural features in Areas 3B and 3C. |
| | **Impacts Exceeding Those Predicted**<br><br>Major reduction in water quality when comparing baseline period to mining period, i.e. comparing baseline data to mining period:<br><br>pH drop of >2<br><br>EC increase >100 uS/cm<br><br>ORP* drop >200 mV<br><br>A > 2 standard deviation reduction in water quality apparent at downstream monitoring site when comparing pre-mining to baseline data. | **Contingent Measure**<br><br>Grouting and repair of surface water controlling features and the beds of streams where fracturing is evident where it is appropriate to do so in consultation with SCA, DPIM, DECC and other stakeholders.<br><br>Limestone emplacement to raise pH where it is appropriate to do so in consultation with SCA, DPIM, DECC and other stakeholders. |
| ***Water quality– ephemeral streams*** | **Predicted Impacts**<br><br>Some buckling and fracturing of creek beds & diversion of flows.<br><br>Impacts on water quality are | **Avoidance & Mitigation**<br><br>Monitoring, measurement and reporting. |

| Description of Item | Key Potential Impacts | Avoidance, Mitigation and Rehabilitation |
|---|---|---|
| | possible due to reduced flow and/or increased interaction of ground and surface water. These impacts are likely to include reduced oxygen, higher dissolved ions and precipitates. There is also a possibility of lower pH and lower temperature variation as a result of groundwater inflows. However, volumes of pooled water in ephemeral streams are small relative to the entire catchment.<br><br>**Impacts Exceeding Those Predicted**<br><br>Major reduction in water quality when comparing baseline period to mining period, i.e. comparing baseline data to mining period:<br>pH drop of >2<br>EC increase >100 uS/cm<br>ORP* drop >200 mV<br><br>A > 2 standard deviation reduction in water quality apparent at downstream monitoring site when comparing pre-mining to baseline data. | **Contingent Measure**<br><br>Grouting and repair of surface water controlling features and the beds of streams where fracturing is evident where it is appropriate to do so in consultation with SCA, DPIM, DECC and other stakeholders.<br><br>Limestone emplacement to raise pH where it is appropriate to do so in consultation with SCA, DPIM, DECC and other stakeholders. |
| ***Groundwater quality, quantity and levels*** | **Predicted Impacts**<br><br>Impacts on groundwater are possible due to increased interaction of ground and surface water as well as increased interaction of groundwater with existing and freshly created fractures within the rock and soil mass. These impacts are likely to include reduced oxygen, higher dissolved ions and lower pH. Shallow groundwater systems are likely to be depressed by increased permeability as a result of fracturing.<br><br>**Impacts Exceeding Those Predicted**<br><br>Major reduction (monitoring bore dry where it has not been prior to mining) in | **Avoidance & Mitigation**<br><br>Monitoring, measurement and reporting.<br><br>Not mining under Wongawilli & Sandy Creeks to avoid major fracturing and loss of surface flow.<br><br>Commitment to avoid significant impacts to major natural features in Areas 3B and 3C.<br><br>**Contingent Measure**<br><br>Mitigation of flow-on ecological effects as described above. |

| Description of Item | Key Potential Impacts | Avoidance, Mitigation and Rehabilitation |
|---|---|---|
| | groundwater level at the majority of bores within any particular aquifer or swamp system or complete loss of groundwater.<br><br>High reduction in water quality, i.e. comparing baseline data to mining period:<br>pH drop of >2<br>EC increase >100 uS/cm<br>ORP* drop >200 mV | |
| ***Surface of the land*** | **Predicted Impacts**<br><br>Some surface cracking posing safe access constraints.<br><br>**Impacts Exceeding Those Predicted**<br><br>Major surface cracking preventing safe access. | **Avoidance & Mitigation**<br><br>Monitoring, measurement and reporting during active subsidence.<br><br>Signage & Fencing where they present safety risks.<br><br>Communication strategy to stakeholders where they present safety risks.<br><br>Fill crack with appropriate material in consultation with infrastructure owner. Install temporary erosion and sediment controls were appropriate.<br><br>**Contingent Measure**<br><br>As above.<br><br>Establishment of alternative access to critical areas. |
| ***Swamps*** | **Predicted Impacts**<br><br>No change in hydrology or ecological function of swamps.<br><br>**Impacts Exceeding Those Predicted**<br><br>Major controlling rockbar cracking leading to water loss in swamp<br><br>Burning and/or erosion of peat material. | **Avoidance & Mitigation**<br><br>Monitoring before, during and after active subsidence.<br><br>**Contingent Measure**<br><br>Implement swamp contingency plan. |

## 4. Swamp Contingency Plan

Prior to the commencement of mining within Dendrobium Area 3A, 3B and 3C, Illawarra Coal will prepare a swamp remediation contingency plan for all swamps within each area.

## 5. Water Quality Offset

Illawarra Coal will negotiate an offset with the SCA to account for the small and unquantifiable water quality impact resultant from the proposal.

## 6. Sandy Creek Waterfall

Prior to the commencement of longwall mining within Dendrobium Area 3A, Illawarra Coal will:

- establish a "technical committee" that includes BHPB, DPI, MSEC, and independent subsidence and geotechnical experts to advise on Sandy Creek Waterfall,
- develop and implement detailed management outcomes such as a Trigger Action Response Plan (TARP ) that identifies detailed monitoring and management triggers, including but not necessarily limited to a decision to stop mining, where Longwalls 6-8 extract coal within 400 m of the Sandy Creek Waterfall.

Illawarra Coal will establish cut throughs at 50 m intervals at the finishing end of Longwalls 6 and 7 in order to be able to comply with any decision to stop mining based on the triggers in the TARP. Consideration will be given in the design of development roads for Longwalls 8-10 in regard to the provision of Longwall take off cut throughs in order to achieve compliance with the triggers in the TARP.

## 7. Green House Gas Emission - Measuring and Reporting

Illawarra coal is required to monitor and report green house gas emissions from Dendrobium Mine in accordance with the National Greenhouse and Energy Reporting Act 2007. This emissions data will be reported in the AEMR. The AEMR will also discuss current and proposed future action to minimise and/or abate green house gas emissions.

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**APPENDIX 5:**
**INDEPENDENT DISPUTE RESOLUTION PROCESS**