Coalpac Pty Ltd
(In Liquidation)

# Annual Environmental Management Report

# 2014

# Cullen Valley Mine

Coalpac Pty Ltd (In Liquidation)
Invincible Colliery
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Cullen Bullen NSW 2790

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| | |
|---|---|
| **Name of Mine:** Cullen Valley Mine | |
| **Mining Title / Leases:** ML 1455, ML 1488, ML 1556, ML 1557 | |
| **MOP Commencement Date:** 14 Feb 2013 | **MOP Completion Date:** 1 Jul 2015 |
| **AEMR Commencement Date:** January 2014 | **AEMR Completion Date:** December 2014 |
| **Name of Leaseholder:** Lithgow Coal Company Pty Ltd (In Liquidation) | |
| **Name of Mine Operator:** Coalpac Pty Ltd (In Liquidation) | |

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# EXECUTIVE SUMMARY

Coalpac Pty Limited (In Liquidation) owns and manages the Cullen Valley Mine located north-west of the township of Cullen Bullen. Development Consent DA-200-5-2003 for the Cullen Valley Mine Open Cut Extension was granted by the Minister for Planning on 19 August 2004 for the production of up to one Million tonnes of Saleable Coal until August 2025.

The Cullen Valley Mine Annual Environmental Management Report has been prepared pursuant to Schedule 6, Condition 5 of the Development Consent DA-200-5-2003 and in accordance with the Department of Trade and Investment - Division of Resources and Energy *Guidelines to the Mining, Rehabilitation and Environmental Management Process (EDG03)*.

Cullen Valley Mine was placed in care and maintenance in December 2012 and no mining activities were undertaken during this reporting period. Some minor works relating to the sub-surface heating area, and sediment control programs were undertaken during the period. The environmental performance at Cullen Valley Mine during the reporting period is considered to be high as evidenced by the following:

- Air quality monitoring results recorded during the reporting period for depositional dust and fine particulate matter ($PM_{10}$) were well below the Environmental Protection Authority assessment criteria in Cullen Bullen and other privately owned properties adjacent to the Mining Leases;
- There were no noise exceedances recorded at privately owned properties during the reporting period;
- There was no discharge of water or adverse impacts to down-stream water users recorded during the reporting period;
- There were no adverse impacts to groundwater resources recorded during the reporting period;
- Known Aboriginal and European cultural heritage items were not impacted during the reporting period; and
- Continuation of nesting box trial to provide supplementary habitat in rehabilitated areas, if demonstrated to be successful it is proposed to extend the trial to other areas at the site.

Rehabilitation areas continue to develop in their floristic diversity and strata composition and provide important foraging habitat for a range of woodland bird species and other native animals.

In October 2014 Coalpac entered liquidation as a result of the inability to gain planning approval for any extension of the open cut mining operations.

# 1 INTRODUCTION

## 1.1 SCOPE OF AEMR

This Annual Environmental Management Report (AEMR) refers to the environment and community performance of the Cullen Valley Mine during the 2014 reporting period. The general location of the operation is shown in **Figure 1**. This report has been prepared in accordance with guidelines published by the Department of Trade and Investment – Division of Resources and Energy (DRE) *Guidelines and Format for Preparation of an Annual Environmental Management Report:* 2006. This AEMR is intended to satisfy the requirements of:

- Cullen Valley Mine Development Consent Schedule 6, Condition 5 (DA 200-5-2003), issued by the then Department of Infrastructure, Planning and Natural Resources (DIPNR) under the *Environmental Planning & Assessment Act 1979* (EP&A Act); and
- Mining Lease (ML) Conditions (ML1455, ML 1488, ML1556 & ML1557), set by DRE under the *Mining Act 1992* (Mining Act) and associated Regulations.

This report is distributed to:

- Department of Planning and Environment (DP&E);
- Division of Resources and Energy (DRE);
- Environmental Protection Agency (EPA);
- NSW Office Environment and Heritage (OEH);
- NSW Office of Water (NOW);
- Forestry Corporation of NSW;
- Lithgow City Council (LCC); and
- Community Consultative Committee (CCC).

In addition the AEMR is uploaded on the Coalpac website (see **Table 1**).

## 1.2 HISTORY

The Cullen Valley Mine site contains the former operational areas of the Tyldesley and Beaumaris Collieries, where coal mining via underground methods commenced in the late 1800s. A range of open cut and underground mining operations have been undertaken at the site since this time, with activities suspended at various times in the intervening period.

On 24 December 1997, the Lithgow Coal Company (previous owners of the Cullen Valley Mine) was granted DA 200-5-2003 by the Minister for Planning and Infrastructure for the operations described in the '*Feldmast Coal Project Environmental Impact Statement 1997'* (Feldmast EIS) (IEC 1997). The Feldmast EIS described and assessed open cut, underground and highwall mining activities at the Cullen Valley Mine. Open cut mining consistent with the Feldmast EIS commenced in May 2000.

Upon identification of additional northern open cut coal reserves, adjacent to the Wallerawang-Gwabegar Railway Line, the '*Cullen Valley Mine Open Cut Extension EIS'* (Cullen Valley Mine EIS) (IEC 2004) was lodged in April 2004. This modification to DA 200-5-2003 was granted by the (then) DIPNR on 19 August 2004.

The EIS approved open cut mining activities on the western side of Tyldesley Hill and continued activities under the Feldmast EIS.

Product coal from Cullen Valley Mine has historically been supplied under contract to Mount Piper Power Station (MPPS). However, with the failure of the mine to renew a supply contract, the operation was placed on a Care and Maintenance program in June 2007.

In February 2008, when Coalpac acquired Cullen Valley Mine from the Lithgow Coal Company, the mine was taken off Care and Maintenance. The open cut and highwall mining operations approved under DA 200-5-2003 re-commenced at that time. In December 2012 Cullen Valley Mine was placed into Care and Maintenance.

In October 2014 Coalpac entered liquidation as a result of the inability to gain planning approval for any extension of the open cut mining operations.

## 1.3 MINE CONTACTS

The contact details for Cullen Valley Mine for the reporting period are listed in **Table 1**.

**Table 1**
**Mine Contacts for Cullen Valley Mine**

| **Mine Personnel** | |
|---|---|
| General Manager & Manager of Mining Engineering | Graham Goodwin |
| **General Contact Details** | |
| Cullen Valley Mine Address | Portland Road<br>Cullen Bullen, NSW 2790 |
| Phone Number | 02 6359 0600 |
| Coalpac website | www.cetresources.com |

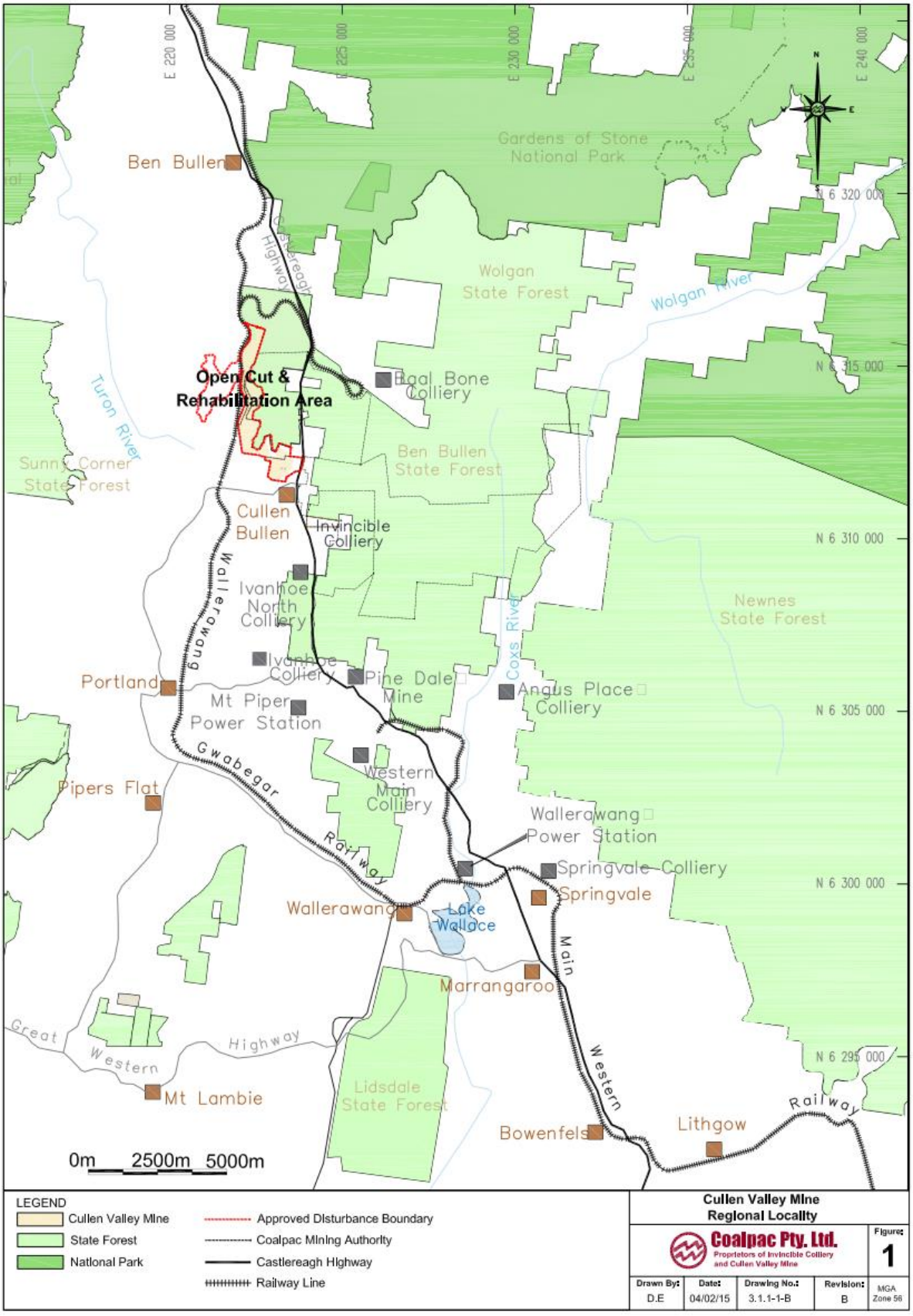
## 1.4 CONSENT, LEASES AND LICENCES

Mining operations at Cullen Valley Mine are approved under a number of licenses, approvals and leases, the status of which are summarised in **Table 2**.

**Table 2**
**Status of Approvals and Leases**

| Document | Description | Start | Expiry | Authority |
|---|---|---|---|---|
| DA 200-5-2003 | Development Approval | 19/08/04 | 19/08/25 | DP&E |
| Mining Lease ML1455 | Surface Mining Lease | 19/08/99 | 19/08/20 | DRE |
| Mining Lease ML1488 | Surface Mining Lease | 21/06/01 | 21/06/22 | DRE |
| Mining Lease ML1557 | Surface Mining Lease | 20/09/04 | 20/09/25 | DRE |
| Mining Lease ML1556 | Underground Mining Lease | 20/09/04 | 20/09/25 | DRE |
| Mining Operations Plan 2013 - 2015 | For Care & Maintenance | 14/02/13 | 01/07/15 | DRE |
| EPL No. 10341 | Cullen Valley EPL | 10th Dec | Annually | EPA |
| WAL 27898 | Water Access Licence | 16/01/12 | 05/07/15 | NOW |

## Figure 1
## Regional Locality



### 1.5 ACTIONS ARISING FROM PREVIOUS AEMR REVIEW

The 2013 AEMR was acknowledged to have been prepared to a high standard with an appropriate level of detail from the DRE. Issues and recommendations arising from a site inspection conducted on 9 September 2014 relate to the subsurface heating area, and are summarised in **Table 3**.

**Table 3**
**Actions Arising from Previous AEMR Review**

| Item | Action | Section |
|---|---|---|
| 1 | Continue monitoring of heating areas and recent material capped areas | **Section 1.2** |

## 2 OPERATIONS DURING THE REPORTING PERIOD

### 2.1 LAND OWNERSHIP

Land ownership surrounding the Cullen Valley Mine primarily consists of private freehold, Coalpac (and subsidiary) owned land, land owned by other mining companies and Crown Land managed by the Forestry Corporation of NSW. The current status of Coalpac land ownership is shown in **Figure 2**.

### 2.2 EXPLORATION

There were no exploration activities undertaken within the boundaries of any mining authorities related to the Cullen Valley Mine during the reporting period.

### 2.3 LAND PREPARATION

Land preparation, which occurs directly in advance of open cut mining, involves the clearing of generally remnant vegetation, stripping and removal of topsoil, subsoil and clay, and the removal of overburden through drill and blast and/or a combination of ripping with dozers.

No clearing activity took place during this reporting period. Mining activity during the reporting period is discussed in more detail in **Section 2.6**.

Cullen Valley Mine was placed into Care and Maintenance in December 2012, as such no further mining or land clearing activities have been undertaken since that time.

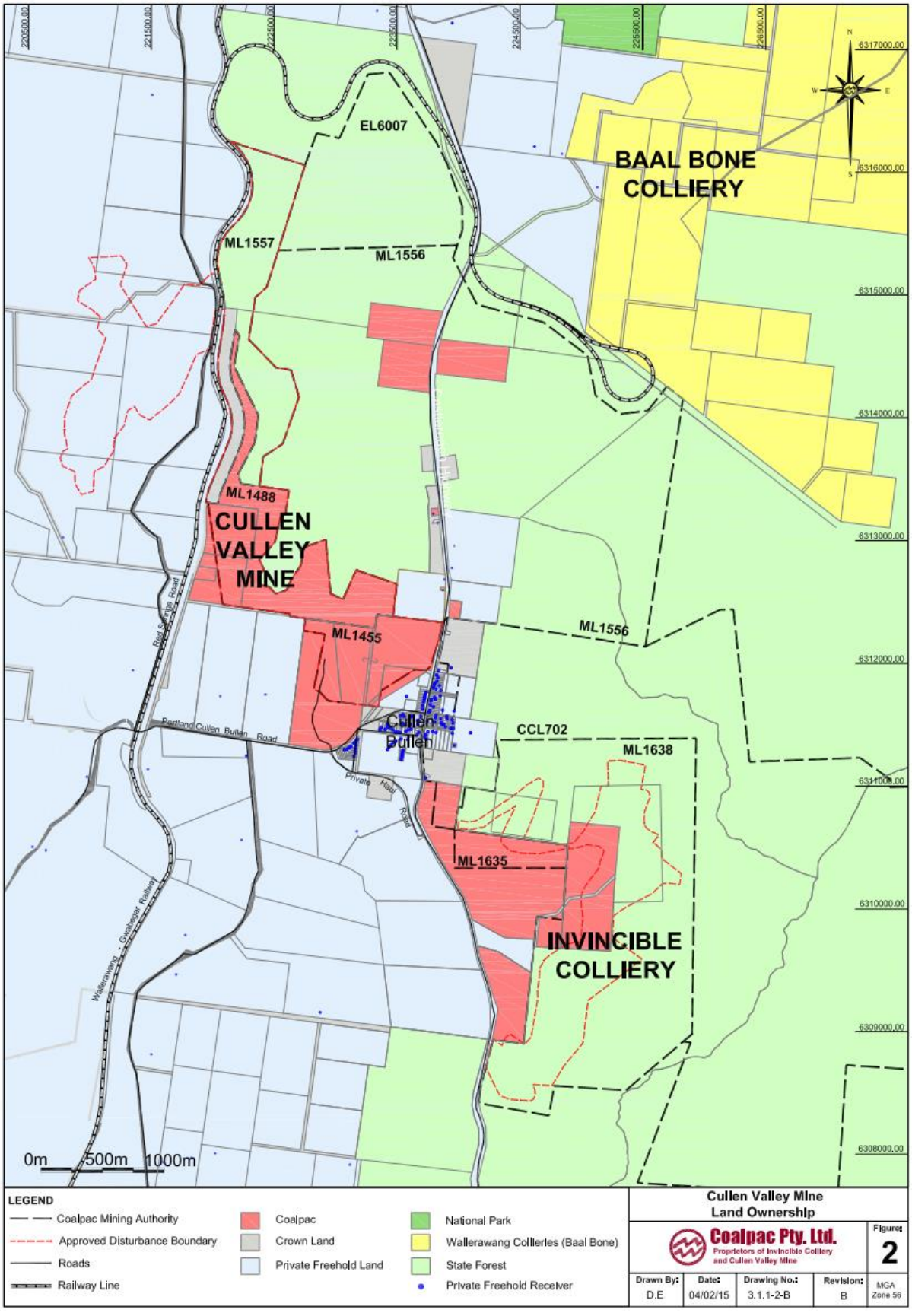
### 2.4 CONSTRUCTION

There were no construction activities undertaken during the reporting period due to Cullen Valley Mine being in care and maintenance.

### 2.5 DEMOLITION

No demolition took place during the reporting period.

## Figure 2
## Land Ownership



## 2.6 MINING

### 2.6.1 OPERATIONS

No mining or clearance took place during the reporting period. Coalpac suspended its mining activities at Cullen Valley Mine in December 2012. No processing or transportation of coal occurred in the reporting period.

The mine will remain on care and maintenance until the necessary approvals can be gained to recommence mining operations.

Coalpac submitted a revised MOP for a small open cut operation and rehabilitation programme to DRE for consideration and approval in March 2015. If approved, open cut mining operations would recommence in the north-west corner of Pit 106 prior to the rehabilitation of the remaining northern section of Ml 1557. Mining in 2015 is contingent upon the necessary approvals being gained in a timely fashion.

### 2.6.2 PRODUCTION

No production occurred during the reporting period. A summary of the production figures and mining activity for 2014 and the forecast production expectations for 2015, pending approval are summarised in **Table 4**.

**Table 4**
**Production and Waste Summary**

| Material | Units | AEMR Period | |
|---|---|---|---|
| | | 2014 (Actual) | 2015 (Estimated)* |
| **Topsoil stripped** | $m^3$ | 0 | 7,500 |
| **Topsoil used/spread** | $m^3$ | 0 | 0 |
| **Waste Rock** | Tonnes | 0 | 1,300,000 |
| **ROM Coal** | Tonnes | 0 | 230,000 |
| **CPP Processed** | Tonnes | 0 | N/A |
| **Processing Waste** | Tonnes | 0 | N/A |
| **Product Coal** | Tonnes | 0 | 230,000 |

*Dependent on receiving necessary approvals

## 2.7 COAL PROCESSING

### 2.7.1 COAL CRUSHING PLANT

No coal crushing took place on site during the reporting period.

The Cullen Valley Mine ROM coal stockpile has a capacity of approximately 100,000 t and is located adjacent to the crushing facility. There was no coal stockpiled during the reporting period.

## 2.8 COAL TRANSPORT

No coal transport (deliveries) took place on site during the reporting period.

Product coal leaves the mine by road truck and travels along the main access road to the intersection with the Cullen Bullen to Portland Road. At this point, coal trucks cross the public road and travel on a private haul road to the south-west of the township of Cullen Bullen, then travel along the Castlereagh Highway to various destinations, including the Mount Piper Power Station (MPPS) and Invincible Coal Preparation Plant.

In accordance with DA 200-5-2003, the coal transport activities occur between the hours of 7:00am to 5:30pm, Monday to Friday. DA 200-5-2003 also permits coal to be transported on Saturdays between 7:00am and 5:00pm, and for no more than 30 days annually, and at no time on Sundays or public holidays.

## 2.9 WASTE MANAGEMENT

Cullen Valley Mine was placed in care and maintenance in December 2012 which resulted in a general site wide clean up including the removal of liquids from storage tanks, sumps and other relevant locations at this time. There has been little to no waste oil generated by the site while in care and maintenance. All waste materials have been managed in accordance with the approved care and maintenance MOP.

During the 2014 reporting period, quantities of waste removed from the Cullen Valley Mine were monitored and recorded and are presented in **Table 5**.

**Table 5**
**Cumulative Waste Volumes for Cullen Valley Mine**

| Year | General Waste ($m^3$) | Recycling ($m^3$) | Waste Oil (L) |
|---|---|---|---|
| **2014** | <10 | <10 | <1,000 |

## 2.10 WATER MANAGEMENT

### 2.10.1 SURFACE WATER

The water management system at Cullen Valley Mine has been designed (as far as possible) as a closed loop system, with all water which enters the site via rainfall or through the water table being diverted to a series of settlement dams within the site.

There are four dams currently on site, two of which are licensed discharge points that are also used for surface water monitoring locations. These are LD001 (Dam 1) and LD004 (Dam 4) as shown in **Figure 4**. Between Dam 1 and Dam 4, two other settlement dams (Dam 2 and Dam 3) are used to store water during heavy rainfall events from predominately hardstand areas and from batter slopes of the noise/visual bund. The dams are generally kept at low levels unless periods of extended dry conditions are forecasted and/or experienced.

## Figure 3
## Mining Activities 2014

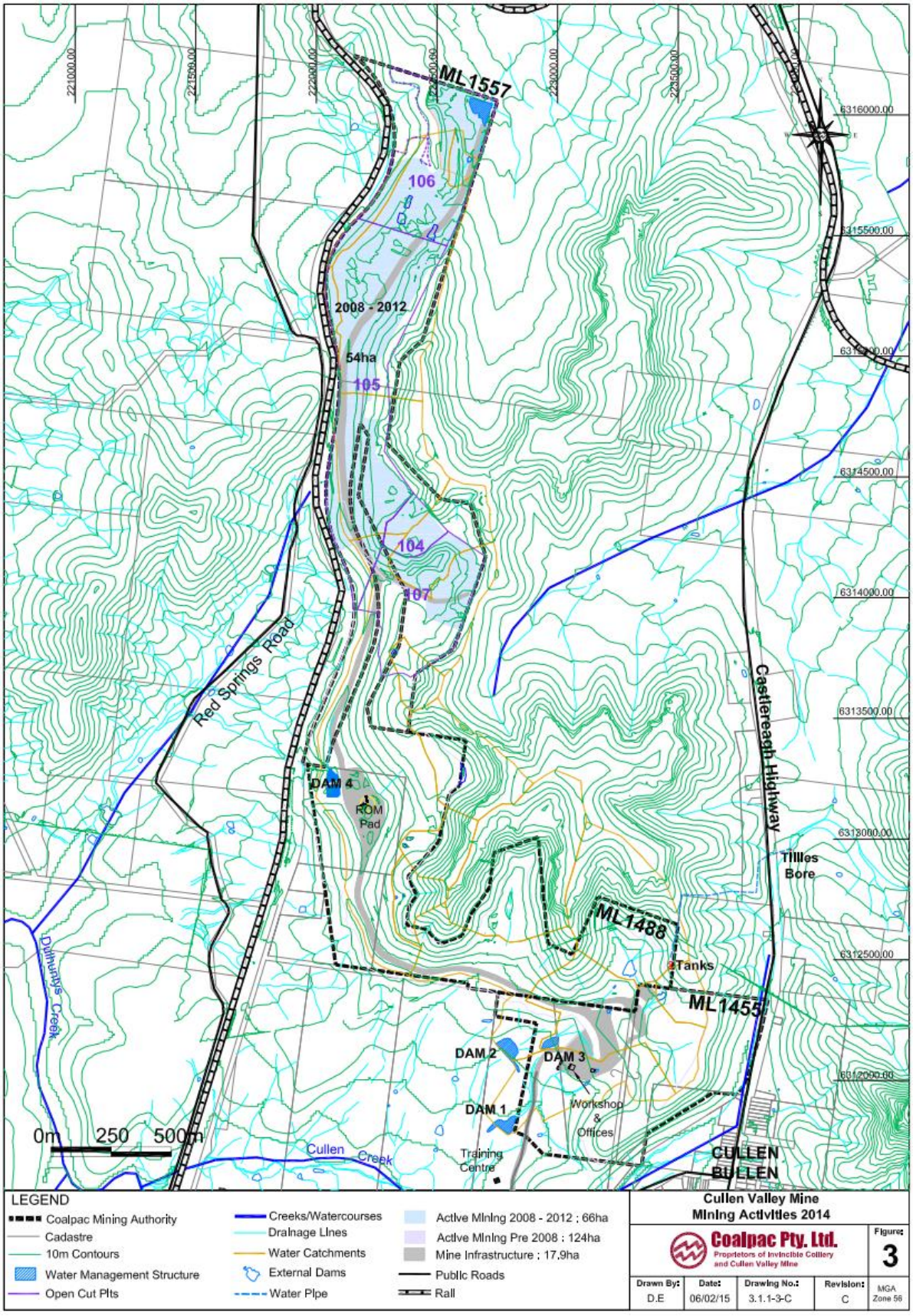
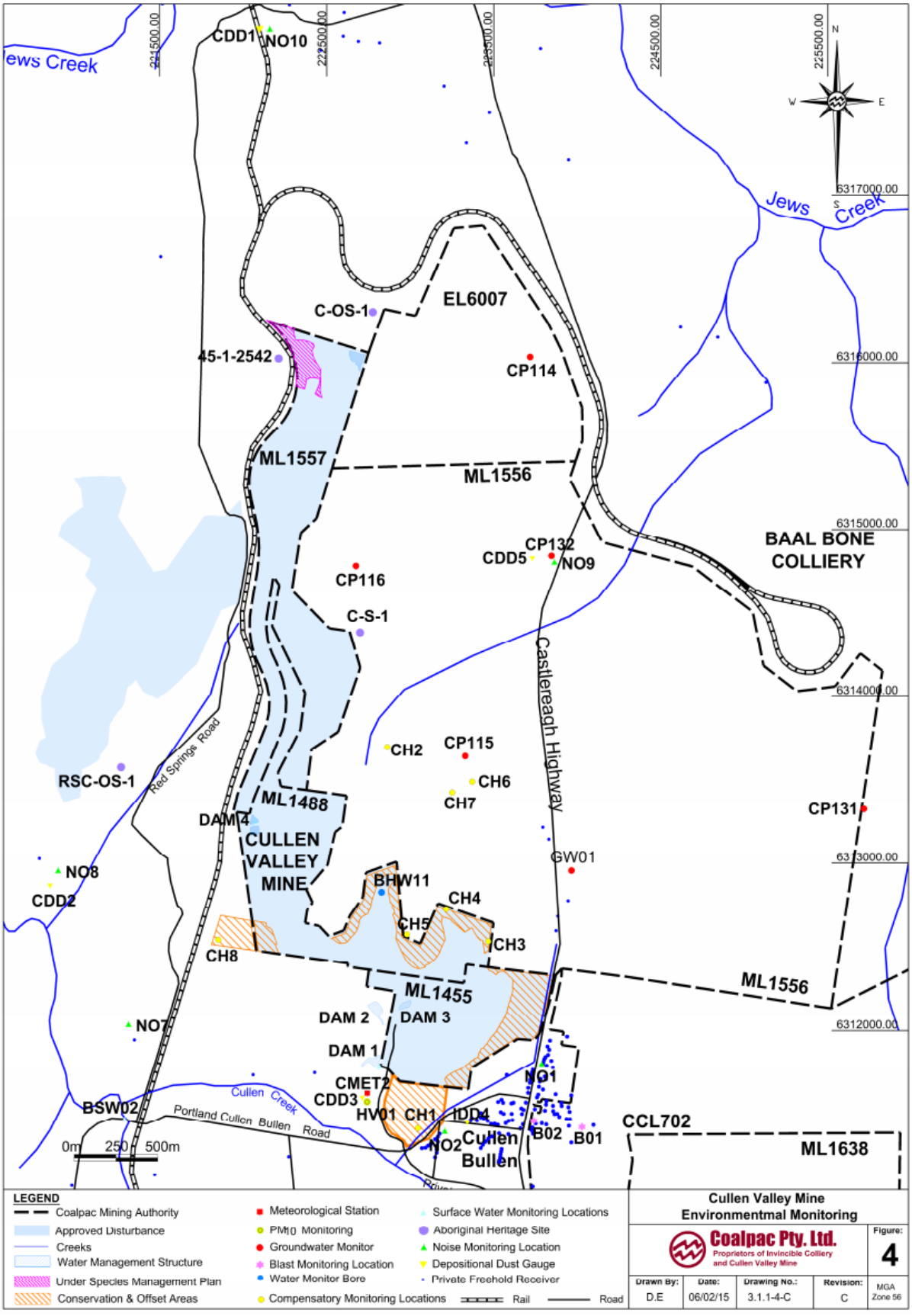


**Figure 4**
**Environmental Monitoring**



Each dam is connected by a series of pipelines. Dam 1 has a large automatic submersible pump which, if required, can pump water into the rehabilitation areas which can be used to assist in the remediation of subsurface heating (see **Section 3.18**), whilst allowing percolation of this water back into underground workings for temporary storage. Dam 4 (located adjacent to the current ROM stockpile area) can transfer water to Dam 3 or be used for dust suppression (i.e. a submersible pump has been installed) which in turn can transfer water to Dam 2 which, if full, can then transfer water to Dam 1. Once Dam 1 is full, the automatic pump system will transfer the additional water to the underground mine workings for storage.

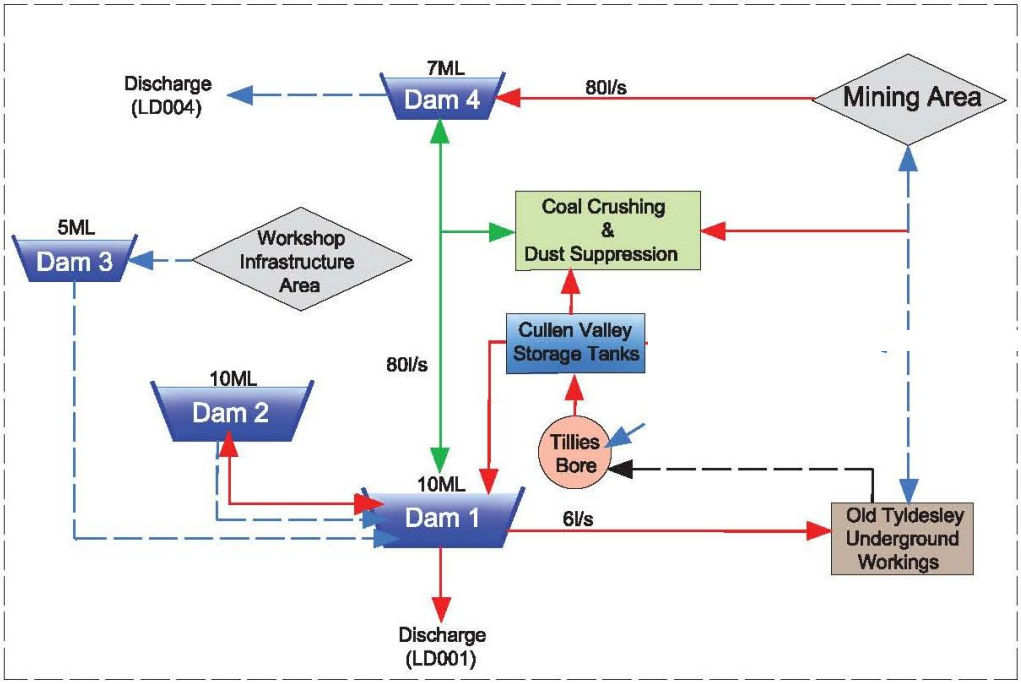
The Cullen Valley Mine Water Management System is designed as far is possible not to discharge any water from the site. All rehabilitation areas are designed with large contour drains which capture runoff during rain events. Due to the location of a large section of the rehabilitation over the old underground workings of the abandoned Tyldesley Colliery, water that percolates through the soil will ultimately flow into the underground workings for storage. The water level of the underground workings is monitored and recorded on a regular basis which is discussed further in **Section 3.7**.

The ROM pad in the mine infrastructure area and hardstand areas (i.e. haulage road) is designed to allow water to flow into Dam 4. Coalpac can transfer water between Dam 4 and Dam 1 for dust suppression and other mining related activities. Dam 4 can also be fitted with a water standpipe for use by water trucks.

Cullen Valley Mine has two large header tanks on site (approximately 500,000L capacity) which are used for filling up water trucks for dust suppression and ensuring a regular supply of water is available in Dam 1 for dust suppression. These tanks are fed by a bore pump located offsite which is drawn from the old Tyldesley Colliery underground workings.

Surface water runoff captured within the mine void is stored in temporary catchment dams and pumped to Dam 4. During events of high rainfall, active mining areas act as catchment dams, with all such water pumped out on a regular basis to Dam 4 for storage, settlement of particulates and re-use onsite. Potable water for use in the administration and bathhouse is supplied to the mine from the Fish River Water Supply pipeline. A schematic drawing of the water management system at Cullen Valley is shown in **Table 5**.

**Figure 5**
**Cullen Valley Mine Water Management System**




## 2.11 GROUNDWATER

The Illawarra Coal Measures are not saturated as the coal seams typically crop out to the east, north, and west. Therefore, groundwater seepage from these coal seams does not occur during open cut mining activities. Due to the hydrogeology of the area Cullen Valley Mine has been shown to have minimal to no impact on adjacent known registered bores, other groundwater users, aquifer depressurisation, groundwater dependent ecosystems and the flooded underground mine workings. Groundwater is monitored at several sites surrounding the Cullen Valley Mine located as shown on **Figure 4**.

## 2.12 HAZARDOUS MATERIALS MANAGEMENT

The volume of hazardous materials delivered and stored onsite has reduced from previous periods due to care and maintenance. The majority of hazardous materials have been removed from site and tanks emptied. Due to entering care and maintenance Work Cover NSW License No. 07-100153-004 was surrendered. A nominal 1,000L of diesel fuel is maintained in a self bunded diesel tank at the site for use in light vehicles.

# 3 ENVIRONMENTAL MANAGEMENT AND PERFORMANCE

## 3.1 ENVIRONMENTAL RISK ASSESSMENT

Coalpac uses a risk matrix in order to identify areas where mining and mining related activities have the potential to place the natural environment at risk. The mining related environmental risks have been largely reduced due to the cessation of mining activities and Cullen Valley Mine being placed in care and maintenance.

The identification and assessment of environmental risks at the mine has allowed appropriate management plans and procedures to be developed to minimise the potential risk to the environment. A risk assessment was undertaken by site personnel for Cullen Valley mine and is included in the approved care and maintenance MOP dated May 2013.

Management controls have been implemented for all items which have been assessed as either high or medium risk. Such environmental management controls are described in the following sections. The environmental risk assessment will be reviewed as required.

The risk matrix, shown in **Figure 6** classifies the risk of environmental harm resulting from each of the mining activities at Cullen Valley Mine as either extreme (E), high (H), significant (S), moderate (M), low (L), or not applicable (N/A) if such activity does not occur at Invincible Colliery. The risks have been ranked and shaded in accordance with the Coalpac Risk Matrix, see **Table 6**.

The environmental risk identification matrix is reviewed annually during the preparation of the AEMR.

**Figure 6**
**Coalpac Risk Matrix**

| | | | | | | A Certain | B Probable | C Possible | D Remote | E Improbable |
|---|---|---|---|---|---|---|---|---|---|---|
| Rating | Safety | Note: Consequence may consist of a single event or may represent a cumulative impact over a period of 12 months | | | | Will occur – common or frequent occurrence | Likely to occur | Could occur | Unlikely to occur | Practically impossible to occur |
| | | Material Damage/ Machinery Breakdown | Business Interruption | Environment | Reputation | | | | | |
| 1 Catastrophic | Multiple Fatalities | > $5.0m | > 3 month | Massive leak/spill | International Impact | 1 (E) | 3 (E) | 5 (H) | 7 (H) | 11 (S) |
| 2 Major | Fatality | $1.0m to $5.0m | 1 month to 3 months | Major leak/spill | National Impact | 2 (E) | 4 (E) | 8 (H) | 12 (S) | 16 (M) |
| 3 Moderate | Serious Bodily Injury | $0.1m to $1.0m | 1 week to 1 month | Localised leak/spill | Regional Public Impact | 6 (H) | 9 (H) | 13 (S) | 17 (M) | 20 (L) |
| 4 Minor | Lost Time Injury | $10,000 to $0.1m | 1 day to 1 week | Minor leak/spill | Some Public Concern | 10 (S) | 14 (S) | 18 (M) | 21 (L) | 23 (L) |
| 5 Insignificant | First Aid | Up to $10,000 | Up to 1 day | Slight leak/spill | No Public Concern | 15 (S) | 19 (M) | 22 (L) | 24 (L) | 25 (L) |

| Risk Matrix Result | Risk Rating | | Rating Definitions |
|---|---|---|---|
| 1 to 4 | 1 | Extreme Risk | Immediate intervention required from senior management, to eliminate or reduce risk |
| 5 to 9 | 2 | High Risk | Imperative to eliminate or reduce risk to a lower level by the introduction of control measures. Management planning required at senior levels |
| 10 to 15 | 3 | Significant Risk | Corrective action required, senior management attention needed |
| 16 to 19 | 4 | Moderate Risk | Corrective action to be determined, management responsibility must be specified |
| 20 to 25 | 5 | Low Risk | Corrective action where practicable, manage by routine procedures |

**Table 6 Environmental Risk Identification Matrix**

| Issue | Mining Activity, Process or Facility | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exploration | Land preparation, vegetation, topsoil stripping | All construction activities including earth moving | Mine development and mining, surface and underground | Maintenance of roads, tracks and equipment | Waste rock emplacement management | Mineral processing facilities and infrastructure | Ore/product stockpiling and handling | Tailings impoundment management | Water management including storm event contingencies | Hazardous materials and fuel, handling/spills management | Sewerage | Rubbish disposal | Rehabilitation activities | Rehabilitated land and remaining features |
| Air pollution, dust/other | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |
| Erosion/sediment minimisation | n/a | n/a | M | n/a | L | M | n/a | n/a | n/a | H | L | L | L | M | L |
| Surface water pollution | n/a | n/a | L | n/a | L | M | n/a | n/a | n/a | L | L | L | L | L | L |
| Ground water pollution | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |
| Contaminate or polluted land | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |
| Threatened flora protection | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |
| Threatened fauna protection | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |
| Weed control and | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | M | M |
| Operational noise | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |
| Vibration and air blast | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |
| Visual amenity, stray light | n/a | n/a | L | n/a | L | M | n/a | n/a | n/a | L | L | L | L | L | L |
| Aboriginal heritage | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |
| Natural heritage conservation | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |
| Spontaneous combustion | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |
| Bushfire | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |
| Mine subsidence | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |
| Hydrocarbon contamination | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | M | L | L | L | L |
| Methane drainage/venting | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | H |
| Public safety | n/a | n/a | L | n/a | L | L | n/a | n/a | n/a | L | L | L | L | L | L |

## 3.2 METEOROLOGICAL MONITORING

In accordance with Schedule 4, Condition 28 of DA 200-5-2003, Cullen Valley Mine operates a meteorological monitoring station located as shown in **Figure 4**. A summary of monthly meteorological monitoring results for the reporting period are discussed below.

### 3.2.1 Rainfall

The Cullen Valley Mine received 592 mm of rainfall (130 rainfall days) during the reporting period compared with 415 mm and 97 rainfall days in 2013. The monthly rainfall data for 2014 is summarised in **Table 7**.

### 3.2.2 Temperature

Temperature is monitored at two heights (2 metres and 10 metres respectively) to indicate the occurrence of potential temperature inversions. The maximum temperature recorded during the reporting period was 38.6°C at 2m and 38.5°C at 10m during January. The lowest temperature occurred in July, with a recording of -5.5°C at 2m and -4.2°C at 10m. A summary of monthly temperatures for 2014 is included in **Table 7**.

### 3.2.3 Wind Speed & Direction

Wind roses showing wind speed and direction trends throughout the year are included in **Appendix A**.

**Table 7**
**Cullen Valley Mine Meteorological Station Summary**

| Month | Rainfall (mm) | Cumulative Rainfall (mm) | No of Rain days/ Month | Air Temp. @ 2m (°C) | | | Air Temp. @ 10m (°C) | | | Humidity (%) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Mean | Min | Max | Mean | Min | Max | Min | Max |
| January | 8.0 | 8.0 | 6 | 21.8 | 6.3 | 38.6 | 21.9 | 7.4 | 38.5 | 3.2 | 86.5 |
| February | 11.8 | 19.8 | 9 | 20.6 | 6.5 | 38.1 | 20.7 | 6.9 | 37.8 | 4.1 | 86.5 |
| March | 130.4 | 150.2 | 19 | 17.4 | 4.9 | 26.7 | 17.5 | 5.7 | 26.2 | 31.3 | 87.1 |
| April | 48.0 | 198.2 | 11 | 14.1 | 3.1 | 27.4 | 14.4 | 3.8 | 27.6 | 19.8 | 87.6 |
| May | 13.6 | 211.8 | 8 | 10.1 | 0.3 | 21.8 | 10.6 | 0.9 | 22 | 31.1 | 88.3 |
| June | 36.4 | 248.2 | 20 | 7.4 | -2.0 | 16.5 | 7.8 | -1.1 | 16.7 | 34.4 | 88.9 |
| July | 31.4 | 279.6 | 13 | 5.8 | -5.5 | 17.5 | 6.3 | -4.2 | 18.2 | 22.3 | 88.9 |
| August | 46.2 | 325.8 | 8 | 6.9 | -4.5 | 16.8 | 7.2 | -3.6 | 17.2 | 16.4 | 88.1 |
| September | 23.0 | 348.8 | 9 | 10.4 | -0.8 | 26.8 | 10.7 | -0.1 | 26.8 | 8.6 | 84.8 |
| October | 38.2 | 387.0 | 5 | 12.9 | -4.5 | 30.4 | 13.5 | -3.0 | 29.5 | 12.6 | 85.8 |
| November | 43.4 | 430.4 | 7 | 17.5 | -1.5 | 37.7 | 17.6 | -0.5 | 36.7 | 12.4 | 85.3 |
| December | 162.0 | 592.4 | 15 | 18.2 | 5.4 | 31.2 | 18.2 | 6.3 | 30.7 | 13.2 | 88.4 |
| **TOTAL** | **592.4** | **592.4** | **130** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |

## 3.3 AIR QUALITY

### 3.3.1 ENVIRONMENTAL MANAGEMENT

Air quality impacts at Cullen Valley Mine are managed pursuant to DA 200-5-2003 and the approved Air Quality Monitoring Program (AQMP). DA 200-5-2003 provides assessment criteria for Cullen Valley Mine air quality impacts, which are monitored through a network of dust monitors in accordance with the AQMP.

The monitoring network consists of five dust deposition gauges and one High Volume Air Sampler (HVAS) measuring particulate matter <10µm ($PM_{10}$) located as shown on **Figure 4**.

Air quality impacts at Cullen Valley Mine are managed in a manner that reduces, where possible and practicable, excessive generation of airborne and visual dust.

The control strategies outlined within the care and maintenance MOP were considered adequate to manage risks associated with air pollution.

### 3.3.2 ENVIRONMENTAL PERFORMANCE

The air quality impact assessment criteria for Cullen Valley Mine as specified in DA 200-5-2003 are provided in **Table 8**.

**Table 8**
**Air Quality Impact Assessment Criteria**

| Pollutant | Criterion | Average Period |
|---|---|---|
| Total Suspended Particulate (TSP) matter | 90µg/m$^3$ | Annual average |
| Particulate Matter <10µm (PM10) | 30µg/m$^3$ | Annual average |
| | 50µg/m$^3$ | (24 – hour average) |
| Deposited Dust | 4g/m²/month | Maximum total annual average deposited dust level |
| | 2g/m²/month | Maximum increase in annual average deposited dust level |

The monthly PM10 results are shown in **Figure 7** and attached in full as **Appendix B.** Annual average PM10 and estimated TSP monitoring results are summarised in **Table 9.** All $PM_{10}$ results, with the exception of one, recorded 24-hour averages below the 50µg/m$^3$ Impact Assessment Criteria (IAC) for 2014. The annual average $PM_{10}$ result recorded was 6.0µg/m$^3$ which is well below the long term 30µg/m$^3$ IAC.

The elevated result, 61µg/m$^3$, recorded on 31 October 2014 cannot be related to any known dust generating or climatic events. There were no reports or complaints received relating to air quality in the reporting period. In comparison to all other months it would appear to be an anomaly. The annual average TSP result recorded was 15µg/m$^3$ which is well below the 90µg/m$^3$ limit.

The long term average annual PM10 and TSP levels are all within the nominated criteria, and results demonstrate consistent PM10 and TSP levels from 2010 to 2014 monitoring results (see **Table 9**). The cessation of mining activities has contributed to the general trend of decreasing Pm10 and TSP levels.

**Figure 7**
**HV01 - $PM_{10}$ Monitoring Results 2014**

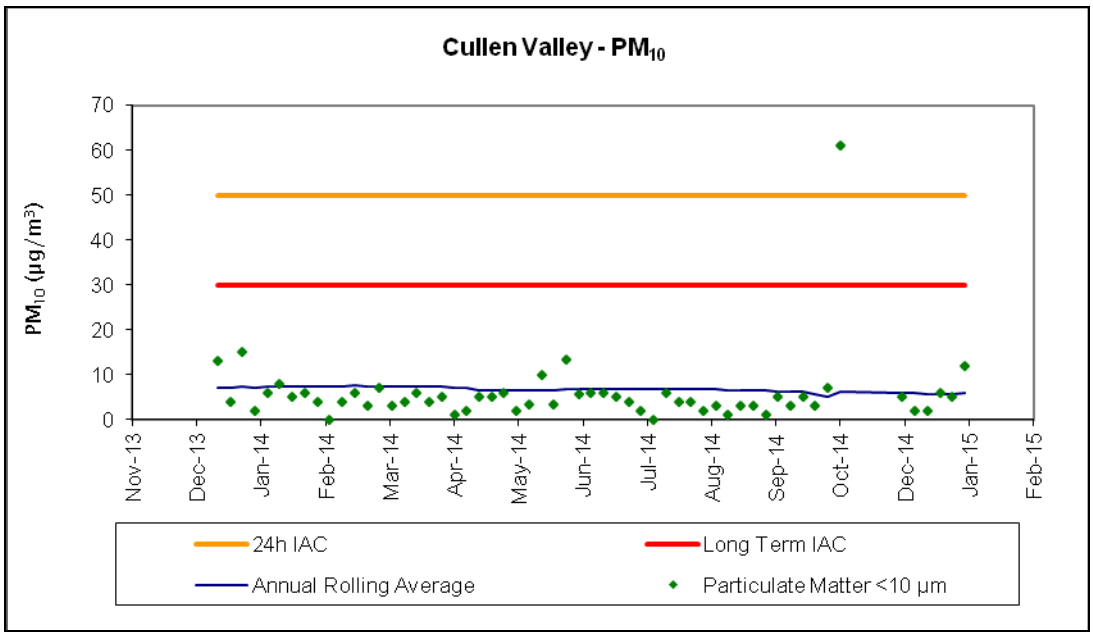



**Table 9**
**$PM_{10}$ and TSP Summary**

| | Particulate Matter <10µm (µg/m$^3$) | TSP (µg/m$^3$) |
|---|---|---|
| Maximum 24h Average result 2013 | 61.0 | n/a |
| OEH Licence Limit $PM_{10}$ 24h | 50 | |
| Annual Average 2010 | 8.5 | 21 |
| Annual Average 2011 | 9.4 | 24 |
| Annual Average 2012 | 6.8 | 17 |
| Annual Average 2013 | 7.0 | 16 |
| Annual Average 2014 | 6.0 | 15 |
| OEH Licence Limit $PM_{10}$ Annual Average | 30 | 90 |

The 1997 EIS (IEC, 1997) indicated that the mining operations would not exceed the prescribed limits set by the DECCW or those within DA 200-5-2003. As a result, air quality data obtained during the reporting period demonstrates compliance with DA 200-5-2003 and EPL 10341 criteria limits, as predicted within the EIS.

All dust deposition gauges, other than CDD5, recorded values below the 4g/m²/month for 2014 (see **Table 7**). Dust monitoring CDD5 ('Doble') recorded values in March, May, June and August above 4g/m²/month. The long term average annual dust deposition rates are all within the nominated criteria, and results demonstrate dust deposition levels consistent with previous years monitoring results (see **Table 10**).

CDD5 exhibits a higher annual average value than previous years. The position of CDD5 is a significant distance from the mine site and, particularly with the operation being in care and maintenance during the reporting period, the cause for the high values cannot be related to any known dust generating or climatic events.

**Table 10**
**Depositional Dust Monitoring Results 2014**

| Date | Total Insoluble Solids (g/m$^2$/month) | | | | |
|---|---|---|---|---|---|
| | Gauge Location | | | | |
| | DM Railway (CDD1) | DM Hillcroft (CDD2) | DM Office (CDD3) | DM Cranes (CDD4) | DM Doble (CDD5) |
| Jan | 0.2 | ** | <0.1 | 0.8 | <0.1 |
| Feb | <0.1 | <0.1 | 0.3 | <0.1 | 0.2 |
| Mar | 0.3 | 0.4 | <0.1 | 0.3 | 7.4 |
| Apr | 0.4 | <0.1 | <0.1 | 0.2 | * |
| May | 0.5 | 0.3 | 0.2 | 0.2 | 4.2 |
| Jun | 0.4 | <0.1 | <0.1 | <0.1 | 5.1 |
| Jul | 0.7 | <0.1 | <0.1 | 0.5 | 0.8 |
| Aug | 0.6 | <0.1 | <0.1 | <0.1 | 5.3 |
| Sep | 0.1 | 2.1 | 0.1 | 0.4 | ** |
| Oct | 0.1 | 0.1 | 0.3 | 0.6 | 1.2 |
| Nov | 0.8 | 0.3 | 1.8 | 2.2 | 1.1 |
| Dec | 0.6 | 0.6 | 0.7 | 0.9 | 1.1 |
| **Annual Averages** | | | | | |
| 2011* | 1.6 | 1.2 | 0.4 | 0.5 | 0.3 |
| 2012 | 0.5 | 1.0 | 0.5 | 0.7 | 0.5 |
| 2013 | 0.8 | 0.6 | 0.7 | 0.6 | 1.2 |
| **2014** | **0.4** | **0.6** | **0.6** | **0.7** | **2.9** |
| **OEH Licence Limit Annual Average** | 4.0 | | | | |

** No sample - Broken bottle ** No sample - Dust stand fell over, broken bottle*

### 3.3.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to air pollution during the reporting period.

### 3.3.4 IMPROVEMENTS

Rehabilitation has been completed as close as practicable possible to open cut mining areas and active material storage areas. The cessation of mining activities and coal processing works at Cullen Valley Mine substantially minimised air quality impacts during the reporting period.

The existing air quality monitoring program and dust management practices will continue to be implemented throughout 2015. All air quality monitoring units will be regularly calibrated and audited to ensure compliance with the appropriate Australian Standard in 2015.

## 3.4 EROSION AND SEDIMENT

### 3.4.1 ENVIRONMENTAL MANAGEMENT

The erosion and sediment control system for Cullen Valley Mine was implemented to safeguard against soil loss and, in turn, minimise the possible risk of water quality impacts. Erosion control structures have been installed around the site with the principle aim of containing sediment at its source. All runoff from disturbed areas is contained in pollution control ponds within the open cut itself and surrounding hardstand areas.

### 3.4.2 ENVIRONMENTAL PERFORMANCE

Erosion control structures at Cullen Valley Mine are inspected on a regular basis, particularly after rainfall events and repaired where necessary. The location of the sediment dams and drainage lines are shown in **Figure 4**. Other erosion and sediment controls which were undertaken during 2014 included:

- Inspections of all water management structures are undertaken and maintenance works carried out if required. This includes inspections of contour banks in rehabilitated areas and site sediment basins.

The effectiveness of the erosion and sediment control structures at Cullen Valley Mine was demonstrated by their performance against a number of high rainfall events throughout the reporting period.

### 3.4.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to erosion and sediment control during the reporting period.

### 3.4.4 IMPROVEMENTS

Improvements throughout the reporting period included:

- Construction of a small water channel in the main valley of the heating area in accordance with the approved Plan of Works.
- Installation of replacement and additional silt fencing and hay bales on the noise bund and on contour drains in specific rehabilitated areas; and
- Maintenance of contour drains and repairing any erosion in rehabilitated areas.

## 3.5 SURFACE WATER

### 3.5.1 ENVIRONMENTAL MANAGEMENT

Surface water quality at Cullen Valley Mine is managed in accordance with the approved Site Water Management Plan. The Cullen Valley Mine water management system is described in **Section 2.10.1**. In accordance with EPL 10341 the following two licensed discharge points at Cullen Valley Mine are required to be monitored against the relevant criteria during a discharge event:

- Discharge and Monitoring Point 1 (Dam 1) – Spillway of pollution control dam; and
- Discharge and Monitoring Point 4 (Dam 4) – Mine de-watering point near railway line.

The locations of these licensed discharge monitoring points is shown in **Figure 4**.

### 3.5.2 ENVIRONMENTAL PERFORMANCE

***Water Monitoring***

There was no release of water from the licensed discharge monitoring points at Cullen Valley Mine during the reporting period.

Coalpac monitors background water quality in Cullen Creek (BSW1) and Dulhunty's creek (BSW2) upstream and downstream of Cullen Valley Mine. The location of these monitoring points is shown in **Figure 4.** The monitoring results for the period are presented in **Table 11**.

**Table 11**
**Background Surface Water Monitoring Results**

| Site | Date | Electrical Conductivity (µS/cm) | pH | Oil & Grease (mg/L) |
|---|---|---|---|---|
| BSW1 | 28/02/2014 | 235 | 3.95 | <5 |
| | 29/05/2014 | 596 | 4.08 | <5 |
| | 26/08/2014 | 467 | 5.67 | <5 |
| BSW2 | 28/02/2014 | 208 | 7.42 | <5 |
| | 29/05/2014 | 857 | 7.61 | <5 |
| | 26/08/2014 | 1860 | 7.8 | <5 |

***Water Use and Storage***

There was minimal water usage during the reporting period due to care and maintenance.

As discussed in **Section 2.10.1** the surface water management system at Cullen Valley Mine has been designed to separate clean and dirty water. Wherever possible, clean water is diverted around the site, with dirty water re-used wherever possible for dust control and mine process water. Temporary structures such as sediment fences are also used to enhance the performance of the permanent water management structures.

The predominant water usage at Cullen Valley Mine is for dust suppression. Estimated usage is approximately 0.45ML per day during normal operations. This amount also includes a component of recycled mine water where possible.

The current pollution control system operating at the mine infrastructure area consists of four interconnected pollution control dams which enable water to be pumped between one another. These dams are sized to contain all surface water runoff from a 1 in 10 year, 72 hour storm event. These criteria equate to a storm resulting in 171mm of rainfall.

This event is in fact larger than a 1 in 50 year, 24 hour storm event (DECCW criteria) which is equivalent to 158mm of rain.

The volumes of stored water onsite during the reporting period are shown in **Table 12**.

**Table 12**
**Surface Water Storage Volume**

| Storage Location | Classification | Volumes Held (ML) | | |
|---|---|---|---|---|
| | | Start of Reporting Period | End of Reporting Period | Storage Capacity |
| Dam 1 | Dirty Water | 3 | 2.5 | 7 |
| Dam 2 | Dirty Water | 10 | 10 | 30 |
| Dam 3 | Dirty Water | 3 | 3 | 5 |
| Dam 4 | Dirty Water | 15 | 15 | 38 |
| LDP001 | Controlled Discharge Water | 0 | 0 | 7 |
| LDP004 | Controlled Discharge Water | 0 | 0 | 38 |
| Oil/ Water Separator | Contaminated Water (Oily Water) | 0.01 | 0 | 0.01 |

Cullen Valley Mine contains a vehicle wash-down bay located at the maintenance workshop. The wash-down bay contains an oil and water separator and a clean water storage dam (approximately 10,000L capacity).

Prior to the site entering care and maintenance, the oil and water separator was cleaned and the contaminated water trucked offsite by a licensed private contractor to be treated. Clean water stored in the dam is pumped by a submersible pump as required to Dam 3, which in turn can transfer water to Dam 2 and Dam 1.

### 3.5.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to surface water during the reporting period.

The EPA visited the railway easement immediately to the west of the Cullen Valley Mine in September 2014 in response to a report they had received regarding alleged acid mine drainage from the mine. The area was inspected in collaboration with Coalpac staff.

Coalpac consider the natural drainage from the Marangaroo Sandstone to be the source of elevated pH water in the locality. There is a history of similar drainage at locations remote from the mine site further north along the rail line. The situation there was attributed to the exposure of the Marangaroo Sandstone in the rail cutting.

The EPA have not as yet issued any official findings with regard to this matter.

### 3.5.4 IMPROVEMENTS

During the reporting period Coalpac constructed the following water management features to further improve the water management system at Cullen Valley Mine and ensure compliance will relevant licenses and approvals.

## 3.6 GROUNDWATER

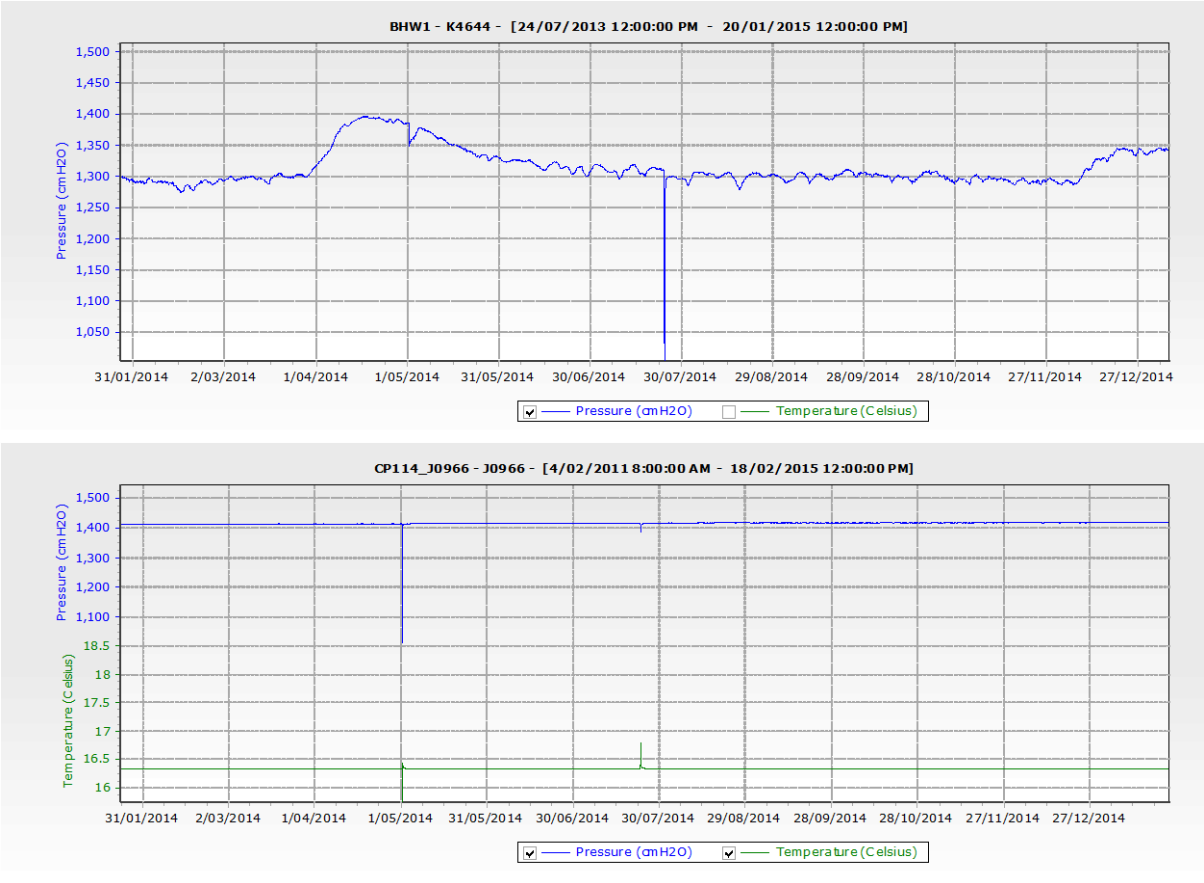
### 3.6.1 Environmental Management

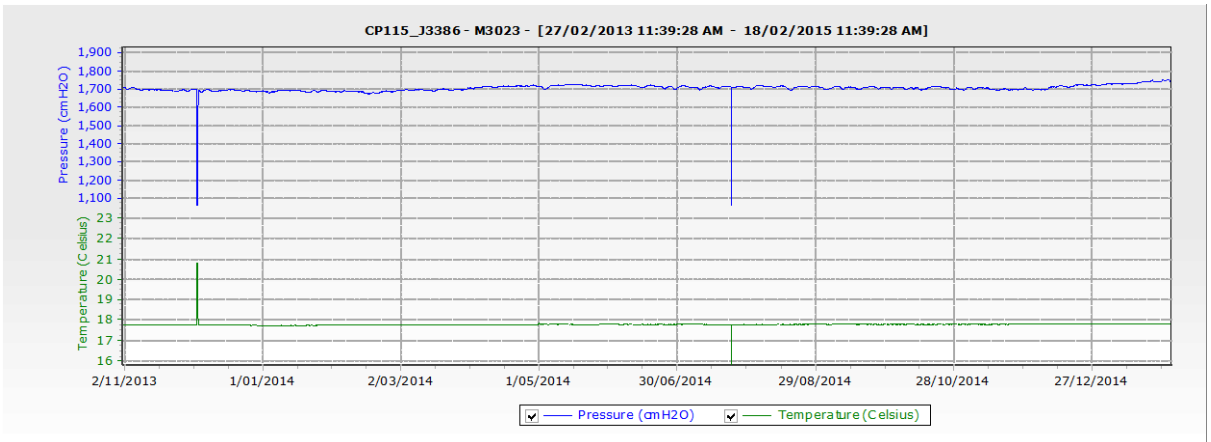
Groundwater assessments undertaken at Cullen Valley Mine have shown that mining activities have not intercepted naturally occurring groundwater resources. This is principally due to the following:

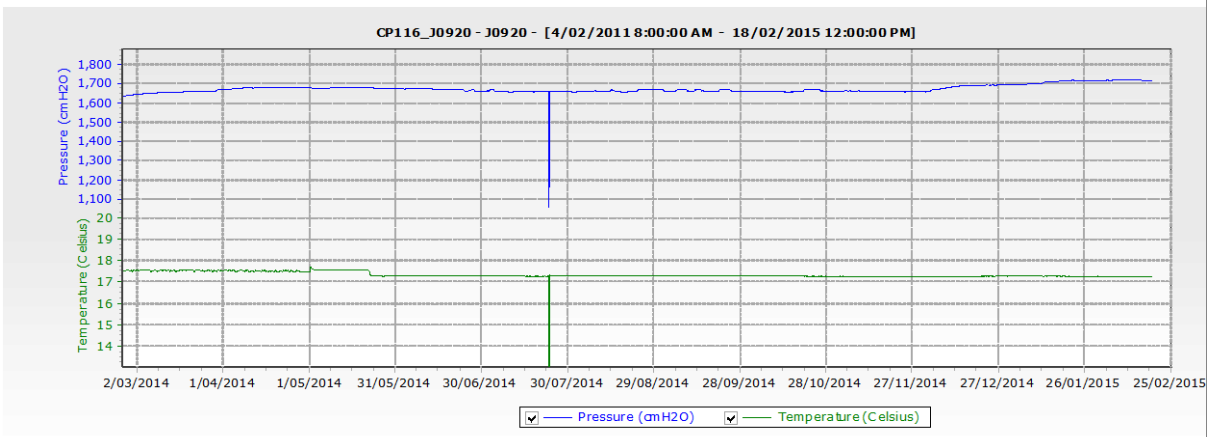
- The location of mining activities occurs above the groundwater table (i.e. in the topographically elevated coal seams within the unsaturated zone);
- The majority of the coal seams crop out at the ground surface on either side of valleys, meaning they do not form a continuous aquifer;
- The low measured hydraulic gradients and connectivity in the coal seams and sandstone aquifers in the region; and
- The significant drawdown of groundwater levels within the existing and previous mining areas at Cullen Valley Mine to the east (down gradient), south due to the previous historical underground mining operations (both onsite and at the adjacent Baal Bone Colliery).

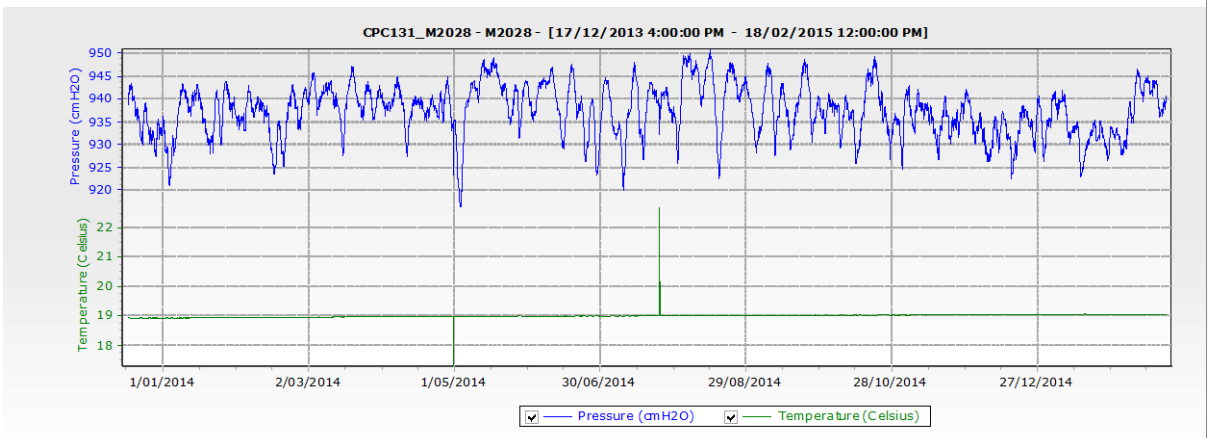
Coalpac monitors groundwater at seven locations adjacent to and surrounding the Cullen Valley Mine. The location of these monitoring points is shown in **Figure 4**. Groundwater level monitoring results are presented in **Figure 8**.

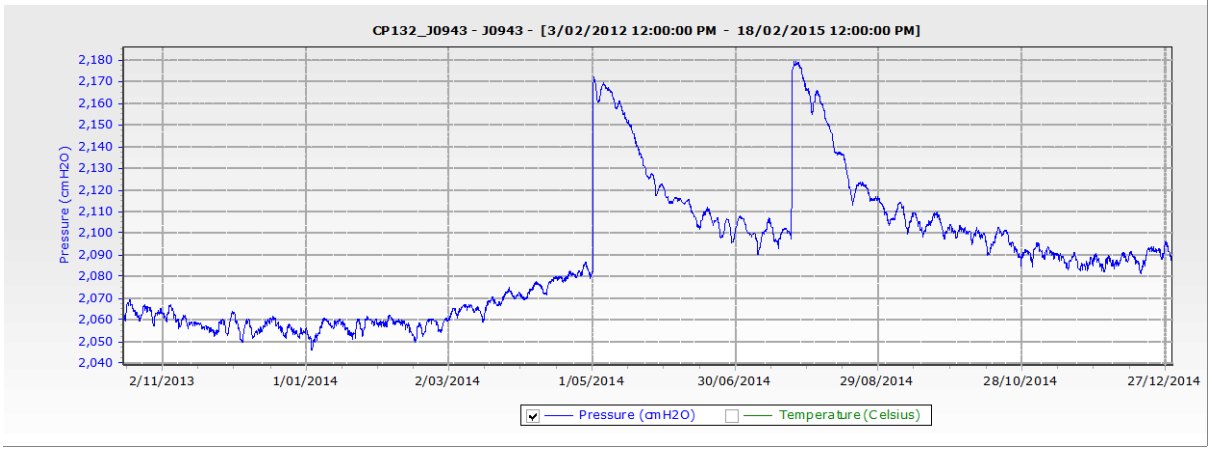
**Figure 8**
**Groundwater Hydrographs 2014**




CP115_J3386 - M3023 - [27/02/2013 11:39:28 AM - 18/02/2015 11:39:28 AM]
Pressure (cmH2O)
Temperature (Celsius)
2/11/2013
1/01/2014
2/03/2014
1/05/2014
30/06/2014
29/08/2014
28/10/2014
27/12/2014
Pressure (cmH2O)
Temperature (Celsius)


CP116_J0920 - J0920 - [4/02/2011 8:00:00 AM - 18/02/2015 12:00:00 PM]
Pressure (cmH2O)
Temperature (Celsius)
2/03/2014
1/04/2014
1/05/2014
31/05/2014
30/06/2014
30/07/2014
29/08/2014
28/09/2014
28/10/2014
27/11/2014
27/12/2014
26/01/2015
25/02/2015
Pressure (cmH2O)
Temperature (Celsius)


CPC131_M2028 - M2028 - [17/12/2013 4:00:00 PM - 18/02/2015 12:00:00 PM]
Pressure (cmH2O)
Temperature (Celsius)
1/01/2014
2/03/2014
1/05/2014
30/06/2014
29/08/2014
28/10/2014
27/12/2014
Pressure (cmH2O)
Temperature (Celsius)


CP132_J0943 - J0943 - [3/02/2012 12:00:00 PM - 18/02/2015 12:00:00 PM]
Pressure (cmH2O)
2/11/2013
1/01/2014
2/03/2014
1/05/2014
30/06/2014
29/08/2014
28/10/2014
27/12/2014
Pressure (cmH2O)
Temperature (Celsius)

Generally groundwater levels were consistent through the reporting period with a slight rise towards the end of the year corresponding to higher rainfall. The spikes in data in May and again in July are attributed to when the sensors were retrieved to take download data.

### 3.6.2 Environmental Performance

The standing water level monitored at the seven locations is generally stable throughout the reporting period and have been shown to be influenced by local rainfall patterns. The long term trends of groundwater levels at monitoring sites throughout the reporting period showed consistent water levels typical of the aquifers monitored.

### 3.6.3 Reportable Incidents

There were no reportable incidents relating to groundwater during the reporting period.

### 3.6.4 Improvements

Due to the cessation of mining activities and Cullen Valley Mine being placed in care and maintenance there have been no additional improvements to the existing approved groundwater monitoring or management strategies.

## 3.7 SUBSURFACE WATER

### 3.7.1 ENVIRONMENTAL MANAGEMENT

Subsurface water is sourced from the old Tyldesley Colliery underground workings and utilised for dust suppression purposes. An average of 0.45ML per day is applied to haul roads and other trafficable areas at Cullen Valley Mine under normal operating conditions. It should be noted that, due to Cullen Valley Mine being in care and maintenance, no water was sourced from the old Tyldesley Colliery underground workings for dust suppression purposes during the reporting period.

A water recycling/transfer network was developed for Cullen Valley Mine which allowed for stored water in pollution control dams to be pumped back to the site header water tanks and/or transferred to each of the four onsite dams for dust suppression and process use. The rehabilitation profile for the previously mined areas allows for water to percolate back into the old Tyldesley Colliery underground workings.

It should be noted that a large portion of surface water runoff percolates back into the old Tyldesley Colliery underground workings due to the geology of the local area and location of the backfilled open cut voids into the old underground workings. Excess water is pumped out of the open cut and stored in Dam #4 for settlement of silt and solids prior to being re-used onsite. Subsurface water quality is generally suitable for dust suppression and process water as described in **Section 2.10.1**.

### 3.7.2 ENVIRONMENTAL PERFORMANCE

A groundwater logger (BHW1) was installed in the old Tyldesley Colliery underground workings. The location of this monitoring site is shown in **Figure 4** and the monitoring results are shown in **Figure 8**. Minor fluctuations in the depth of water within the underground workings were observed during the reporting period which is consistent with previously recorded results.

### 3.7.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to subsurface water during the reporting period.

### 3.7.4 IMPROVEMENTS

An additional monitoring site was installed in July 2013 in the sub-surface heating area at Cullen Valley Mine. This will enable the accurate monitoring of the water stored in the old Tyldesley Colliery underground workings in the immediate proximity of the underground heating.

In addition a pipeline was installed directly into the old Tyldesley underground workings at Cullen Valley Mine which allows for water to be pumped directly in the old workings. The location of the pipeline into the old Tyldesley workings in the heating area is shown as Temperature Probe 10 on **Figure 9**.

## 3.8 CONTAMINATED LAND

### 3.8.1 ENVIRONMENTAL MANAGEMENT

A number of management procedures and measures are in place to ensure that all potential contaminants are effectively managed at Cullen Valley Mine. These include:

- The establishment and active management of containment structures and bunds for hydrocarbon storage areas;
- Installation of appropriate waste containers (i.e. general waste and oil bins/drums), recycling bins/drums and spill response equipment;
- Oil and water separator; and
- Regular, or as required collection of waste oil and/or material contaminated with oil/hydrocarbons by a licensed contractor.

### 3.8.2 ENVIRONMENTAL PERFORMANCE

There was no contaminated or polluted land identified at Cullen Valley Mine during the reporting period. No other significant incidents occurred that required the disposal of contaminated material during the reporting period.

### 3.8.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to contaminated land occurred within the reporting period.

### 3.8.4 IMPROVEMENTS

The management procedures and measures in place during 2014 will be continued in 2015.

## 3.9 FLORA AND FAUNA

### 3.9.1 ENVIRONMENTAL MANAGEMENT

Measures for the management and mitigation of flora and fauna impacts at Cullen Valley Mine and in the surrounding area are provided in the Flora and Fauna Management Plan prepared in accordance with Development Consent conditions. The Flora and Fauna Management Plan include a number of procedures and strategies aimed at ensuring that the impacts from mining activities are minimised.

### *Threatened Flora Management*

*Persoonia Marginata* (common name Clandulla Geebung) (see **Plate 1**), is listed as a vulnerable species under Schedule 2 of the NSW *Threatened Species Conservation Act 1995* and as a vulnerable species under the Commonwealth *Environmental Protection Biodiversity Conservation Act 1999.*

A Species Management Plan is in place to reduce impacts on the Clandulla Geebung. The primary mitigation measure to reduce the risk of disturbance is to avoid mining and clearing of the area where Clandulla Geebung have been identified.

**Plate 1**
***Persoonia Marginata* (Clandulla Geebung)**

*Eucalyptus cannonii* (common name Capertee Stringybark), listed as a vulnerable species under Schedule 2 of the NSW *Threatened Species Conservation Act 1995,* was identified within the approved mining area. It is also restricted to the Central Tablelands of New South Wales from Wallerawang to the Rylstone area. In the previously mined areas it was found in Mountain Gum Forest and Tableland Woodland communities.

Rehabilitation works associated with the open cut mining operation seek as far as practical, to re-establish critical elements of the local plant communities now present. Capertee Stringybark seeds have been used in the rehabilitation of the Cullen Valley Mine. This species is difficult to identify as a juvenile and its success and establishment within rehabilitated areas will be monitored over time.

Cullen Valley Mine has established a Compensatory Habitat Area as marked on **Figure 4** conservation and offset area in legend. The Compensatory Habitat Area is approximately 50 ha in size and contains a mixture of flora communities including a healthy Clandulla Geebung population.

### *Threatened Fauna Management*

Fauna surveys conducted over recent years around the area of Cullen Valley Mine have identified a number of threatened fauna species that may be present, either as part of their territory or transient foraging grounds. Threatened fauna species which may be present and/or identified as part of previous surveys include:

- Satin Flycatcher;
- Gang-gang Cockatoo;
- Brushed-tailed Rock-wallaby; and the
- Scarlet Robin.

To ensure that the impacts of the operation on these species, and in fact all fauna species are minimal, the following mitigation measures are employed on site:

- Vegetation clearing is undertaken progressively to minimise disturbance to fauna populations adjacent to mined areas and allow re-colonisation of rehabilitated areas;
- Any felled timber containing hollows are retained and used in the rehabilitated areas to provide potential habitat areas;
- Locally occurring plant species are used in the rehabilitation works (where possible) in an attempt to recreate the habitat areas that have been removed by the mine; and
- All staff and subcontractors are informed of appropriate procedures should fauna be encountered during construction or day to day mining operation, which includes contacting the local Wildlife Information Rescue and Education Service WIRES group if any injured wildlife is found onsite.

### *Habitat Compensation Management*

DA 200-5-2003 requires Coalpac to manage and protect the land in the Compensatory Habitat Area.

The Compensatory Habitat Area is approximately 50 ha in size, and contains a mixture of Sandstone Dry Ridge top Woodland, Tablelands Sheltered Valley Forest, and Tablelands Dry Woodland. The habitat value of each of the areas was described in detail as part of the original EIS process, and is used as the baseline data for the existing habitat.

In order to ensure that the area set aside as compensatory habitat provides ongoing habitat for native flora and fauna, all potential disturbances must be minimised.

A range of management techniques have been implemented to maintain the existing quality of the Compensatory Habitat Area, these include:

- Restricting access to unauthorised personnel;
- Appropriate signage installed at all likely access points; identifying the sensitivity of the area and prohibited access by unauthorised personnel;
- All relevant staff, contractors and visitors to Cullen Valley Mine being made aware of the location and sensitivity of the habitat area; and

- Regular inspections being carried out to assess the status of the area and identify any areas where mitigation works required, on such things as weed control and erosion, or any other remedial work that may be necessary.

### 3.9.2 ENVIRONMENTAL PERFORMANCE

The implementation of the Landscape Management Plan has ensured clear objectives have been identified and impacts controlled in accordance with statutory requirements. No disturbance of flora or fauna occurred during the reporting period.

### 3.9.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to flora and fauna during the reporting period.

### 3.9.4 IMPROVEMENTS

Regular ecological surveys of the rehabilitation areas and the Compensatory Habitat Area will continue in 2015.

## 3.10 FERAL ANIMAL CONTROL

There was no feral animal control required to be undertaken at Cullen Valley Mine during the reporting period.

## 3.11 WEED CONTROL

### 3.11.1 ENVIRONMENTAL MANAGEMENT

Weed control activities at Cullen Valley Mine are undertaken in accordance with the Weed Management Strategy developed to support the Flora and Fauna Management Plan, which provides a range of measures to prevent and/or minimise the occurrence and dispersal of weeds.

To assist on site personnel in identifying noxious weeds at Cullen Valley Mine, a Weed Identification Kit is held on site to aid weed recognition in the field. This kit has been prepared to include noxious weeds listed by the Upper Macquarie County Council (including Bathurst, Blayney, Evans, Lithgow and Oberon council areas) and provides photographs, detailed descriptions, actions required and legal obligations for each.

Accurate identification is important in ensuring that the most effective control strategy is implemented, and that there is no unnecessary loss of native species due to weed infestation. A professional and licensed weed spraying contractor is used onsite to accurately identify; control and monitor weed spraying activities.

### 3.11.2 ENVIRONMENTAL PERFORMANCE

During the reporting period, two weed species were targeted;

- Broom (physical removal); and
- Sifton Bush (*Cassinia arcuata*).

### 3.11.3 REPORTABLE INCIDENTS

No reportable incidents relating to weed management occurred within the reporting period.

### 3.11.4 IMPROVEMENTS

The weed spraying program employed at Cullen Valley Mine is regularly modified to ensure correct identification and treatment of weeds which may be present. The current weed spraying and eradication program will continue to be used for the site during the 2015 reporting period.

## 3.12 OPERATIONAL NOISE

### 3.12.1 ENVIRONMENTAL MANAGEMENT

Noise impacts at Cullen Valley Mine are managed pursuant to Development Consent DA 200-5-2003, EPL 10341 and the approved Noise Monitoring Program. The Development Consent provides assessment criteria for Cullen Valley Mine noise impacts, which are monitored at sites surrounding the Cullen Valley Mine in accordance with the Noise Monitoring Program.

Despite Cullen Valley Mine being in care and maintenance quarterly noise monitoring was undertaken as required by EPL 10341. The monitoring locations are shown on **Figure 4** and the quarterly results provided in the **Table 13**. The attended monitoring program was undertaken by Global Acoustics Pty Ltd who conducted day monitoring at each of the five sites.

### 3.12.2 ENVIRONMENTAL PERFORMANCE

Cullen Valley Mine complied with the daytime LAeq (15 minute) noise criteria at all locations during the reporting period. This was achieved primarily because the site was in care and maintenance and no mining operations were being undertaken.

### 3.12.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to operational noise during the reporting period.

### 3.12.4 IMPROVEMENTS

There will be no further mining activities at the Cullen Valley Mine site whilst it is in care and maintenance. There are no further improvements relating to noise mitigation proposed to be implemented while in care and maintenance.

**Table 13: Quarterly Noise Monitoring Results**

| Location | Quarter 1 LAeq 15 min | | Quarter 2 LAeq 15 min | | Quarter 3 LAeq 15 min | | Quarter 4 LAeq 15 min | |
|---|---|---|---|---|---|---|---|---|
| | Day | Evening | Day | Evening | Day | Evening | Day | Evening |
| Cullen Bullen Central (N01) | IA | NA* | IA | NA* | IA | NA* | ** | ** |
| Cullen Bullen West (N02) | IA | NA* | IA | NA* | IA | NA* | ** | ** |
| Cullen Bullen South (N03) | IA | NA* | IA | NA* | IA | NA* | ** | ** |
| **Day Criterion (dB)** | **40** | | | | | | | |
| **Evening Criterion (dB)** | **35** | | | | | | | |

*Notes: IA denotes inaudible, NA denotes no monitoring carried out, * Invincible was not operating during the evening or night period, ** Due to miscommunication with the Administrators samples were not collected (this was reported to DP&E and monitoring was conducted in February 2015).*

## 3.13 BLASTING

### 3.13.1 ENVIRONMENTAL MANAGEMENT

Blasting at Cullen Valley Mine is managed in accordance with the requirements of DA 200-5-2003 and the Blast Monitoring and Management Plan, with impacts monitored at three locations, when required, as shown in **Figure 4**.

### 3.13.2 ENVIRONMENTAL PERFORMANCE

No blasts were initiated at Cullen Valley Mine during the reporting period.

### 3.13.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to blasting activities during the reporting period.

### 3.13.4 IMPROVEMENTS

There are no further improvements relating to blasting proposed to be implemented while in care and maintenance.

## 3.14 VISUAL, STRAY LIGHT

### 3.14.1 ENVIRONMENTAL MANAGEMENT

The open cut operations are visible from the Portland Road and Red Springs Road. However, progressive backfilling and re-vegetation of these areas has seen it progressively blending with the surrounding landscape.

Minimal lighting is used at Cullen Valley Mine while in care and maintenance. Any lighting required is for safety and emergency requirements only and is implemented on an as needs basis. As such there are very low potential impacts from lighting while in care and maintenance during the reporting period.

The principles followed for the use of lighting at Cullen Valley Mine include:

- The main flood lights and any portable lighting units are directed away from the nearest residences;
- Flood lights attached to towers are adjustable to enable fine tuning of placement and direction; and
- If necessary, varying the location of portable lights to ensure that extraneous light catchment is minimised.

### 3.14.2 ENVIRONMENTAL PERFORMANCE

Rehabilitation of previously mined areas is continuing to progress towards achieving the agreed performance criteria. Further details on progress of the mine rehabilitation are provided in **Section 5**.

### 3.14.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to visual impacts and lighting during the reporting period.

### 3.14.4 IMPROVEMENTS

Coalpac will continue to review the performance of rehabilitated areas to ensure visual impacts are minimized where practical.

## 3.15 ABORIGINAL HERITAGE

### 3.15.1 ENVIRONMENTAL MANAGEMENT

Aboriginal heritage at Cullen Valley Mine is managed in accordance with the requirements of DA 200-5-2003. Indigenous heritage sites identified surrounding the mine included one open campsite, one grinding groove site, an isolated artifact which was a quartzite hammer stone and a rock shelter (see **Figure 4**). Due to the cessation of mining activities during the reporting period, any potential impact from mining operations was obviated.

### 3.15.2 ENVIRONMENTAL PERFORMANCE

Any potential impact to aboriginal cultural heritage was obviated due to the cessation of mining activities.

On 16 July 2014 OEH undertook an inspection of a reported Aboriginal hand stencil in a cave in Ben Bullen State Forest, to the east of Cullen Valley Mine (see **Figure 4**). OEH are of the view of the authenticity of the hand stencil was inconclusive however red stencils were identified at the site. These were not visible to the naked eye but were detected through photographic techniques.

Since its reporting to OEH, the site has been recorded as an Aboriginal site on the NSW Aboriginal Heritage Information Management System (AHIMS) by an independent archaeologist.

### 3.15.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to Aboriginal heritage occurred during the reporting period.

### 3.15.4 IMPROVEMENTS

In 2015 management of Aboriginal heritage will continue to be undertaken in accordance with the requirements of DA 200-5-2003. The newly identified hand stencil will be added to the inspection list.

## 3.16 EUROPEAN HERITAGE

There are no items or areas of European heritage significance known to occur within the approved mining area at Cullen Valley Mine.

## 3.17 SPONTANEOUS COMBUSTION

There were no incidences of spontaneous combustion in coal stockpiles or overburden material during the reporting period.

The Lithgow Seam is known to have a low propensity for spontaneous combustion. *Any future* extraction, processing and stockpiling of coal will continued to be managed to ensure spontaneous combustion is avoided.

## 3.18 SUBSURFACE HEATING IN ESTABLISHED REHABILITATION

### 3.18.1 Background

In November 2007 Coalpac purchased the Lithgow Coal Company Pty Ltd, owner of the Cullen Valley Mine. Coalpac recommenced open cut mining in February 2008. There were only very localised areas affected by sub-surface heating at that time.

In 2009 Coalpac noted dieback of established vegetation on rehabilitated areas in the proximity of the known sub-surface heating. It was also apparent that sub-surface heating was affecting a boundary noise bund wall constructed from open cut backfill material prior to Coalpac's purchase of the mine.

The noise bund was completely excavated and heat affected material was quenched before being emplaced in another area. The noise bund was then reconstructed using inert backfill material to ensure no reoccurrence of sub-surface heating in this area.

Coalpac engaged an independent expert (Olsen Environmental Consulting (OEC)) to develop a Plan of Works (PoW) to address the broader sub-surface heating affected areas. The PoW has been approved by DRE as a variation of the 2011 to 2015 MOP for Cullen Valley Mine.

A chronology of the approved key actions to investigate and treat heat affected areas at Cullen Valley Mine in the PoW is summarised in **Table 14**.

The PoW has been developed to manage the sub-surface heating which will involve, as a minimum, the quenching and capping of heat affected material. The capping work requires access to suitable (non-carbonaceous) material in sufficient quantities. This would be most effectively undertaken in concert with future mining operations when the required volume of suitable material would be available and that is the base assumption of the PoW.

In the interim period until mining recommences, Coalpac has undertaken a significant proportion of the works using available suitable materials. Works undertaken to date include capping heat affected areas and installing additional temperature and water level monitoring points.

Capping involved the removal of the heat affected material down to a maximum depth of 4.0m. The excavated area was predominately backfilled with inert material sourced from most recent open cut mining areas. The last 1.5m of backfill extended for 10m beyond the boundary of the surface expression of sub-surface heating where funneling of air is likely to occur.

It should be noted that the Cullen Valley Mine was placed in care and maintenance in December 2012 pending receipt of future planning approvals. The location of subsurface heating at Cullen Valley Mine and related monitoring points are shown on **Figure 9**.

### 3.18.2 Environmental Management

The approved PoW uses a number of primary factors to measure the success or progress in managing and possibly extinguishing the fire at Cullen Valley Mine. These primary factors are:

- **Control and minimise impact on the community.** This relates to controlling odour, minimising smoke and visibility issues and also eliminating any potential; health and safety risks from direct exposure.
- **Control and minimise environmental impact.** This relates to controlling or minimising air quality impacts and to enabling vegetation to be re-established and maintained on any heat affected areas.
- **Avoiding wastage of coal resource.** This concern would be addressed by minimising or avoiding potentially mineable coal being burnt in situ by the fire.

The PoW has been developed to manage the sub-surface heating which will involve, as a minimum, the quenching and capping of heat affected material. The capping work requires access to suitable (non-carbonaceous) material in sufficient quantities. This would be most effectively undertaken in concert with future mining operations when the required volume of suitable material would be available and that is the base assumption of the PoW.

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**Table 14**
**Chronology of Key Plan of Works Actions**

| Ref | Action | Timing |
|---|---|---|
| 1 | Source suitable materials from future mining area and implement capping of all known active heating areas in open cut.<br><br>Or<br><br>In the event approval is not granted for the CCP source suitable material from Pit 104 and other locations as required. | Completed within 12 months following the recommencement of mining activities<br><br>Completed within six months following decision to close Cullen Valley Mine |
| 2 | Install groundwater monitoring bore. | 30 April 2013 |
| 3 | Identify location of potential trench barriers in open cut backfill. | Identified by 31 May 2013 |
| 4 | Complete ongoing investigation of spontaneous combustion susceptibility of coal and overburden. | 30 June 2013 |
| 5 | Undertake and finalise groundwater assessment study | 30 September 2013 |

| Ref | Action | Timing |
|---|---|---|
| 6 | Install 2 additional temperature monitoring bores adjacent to highwall crest/backfill interface. | 30 September 2013 |
| 7 | Install three gas and temperature monitoring boreholes into abandoned underground workings. | 30 September 2013 |
| 8 | Review initial monitoring data from 5 new boreholes and determine whether additional monitoring points are required. | 31 December 2013 |
| 9 | Determine source, availability and suitability of potential inert materials for injection into underground workings. | 31 December 2013 |
| 10 | Re-assess fire extinguishment strategy in abandoned underground workings. | 31 March 2014 |
| 11 | Determine Project Approval and licencing requirements | 30 June 2014 |

Excavated heat affected material is treated by quenching with water by flooding or spraying. Effective quenching is confirmed using thermal imagery supported by a combination of checking for visible smoke and steam emissions, and odour detection.

Following quenching, this material is used to backfill excavation areas taking care not to place it immediately against any hot areas to avoid any reoccurrence of sub-surface heating. The high clay content of heat affected material makes it a suitable material to incorporate in the upper capping process once it has been thoroughly wetted.

Once a sufficient volume of suitable material is available Coalpac will increase the Reduced Level (RL) of the haul road in this area. This increase in RL will enable heating affected areas upslope of the haul road to be capped effectively and the slope laid back to increase the cover and enable effective re-vegetation of the area. The slope will be profiled and capped with inert overburden material ready for rehabilitation.

Capping areas are regularly inspected visually to ensure their integrity. The on-going thermal imagery monitoring also provides a record of the effectiveness of capping. Visual and odour inspections in combination with thermal imagery will identify any treated areas that require supplementary treatment.

Maintenance would involve excavating zones where emissions are evident and emplacing compacted capping material. The soil erosion contour banks within the open cut backfill will control water flow over capped areas and avoid any deterioration as a result of soil erosion.

Should additional areas of surface expression of sub-surface heating develop they will be observed for six months to determine their likely extent. Once the extent has been determined (after six months or sooner) they will be remediated in an appropriate manner.

### 3.18.3 Environmental Performance

As required under the approved Care and Maintenance MOP OEC undertook a review of progress in February and in September of 2014. Key findings from the OEC report are summarised below and a copy of the Interim review report (September 2014) is provided in full in **Appendix C**.

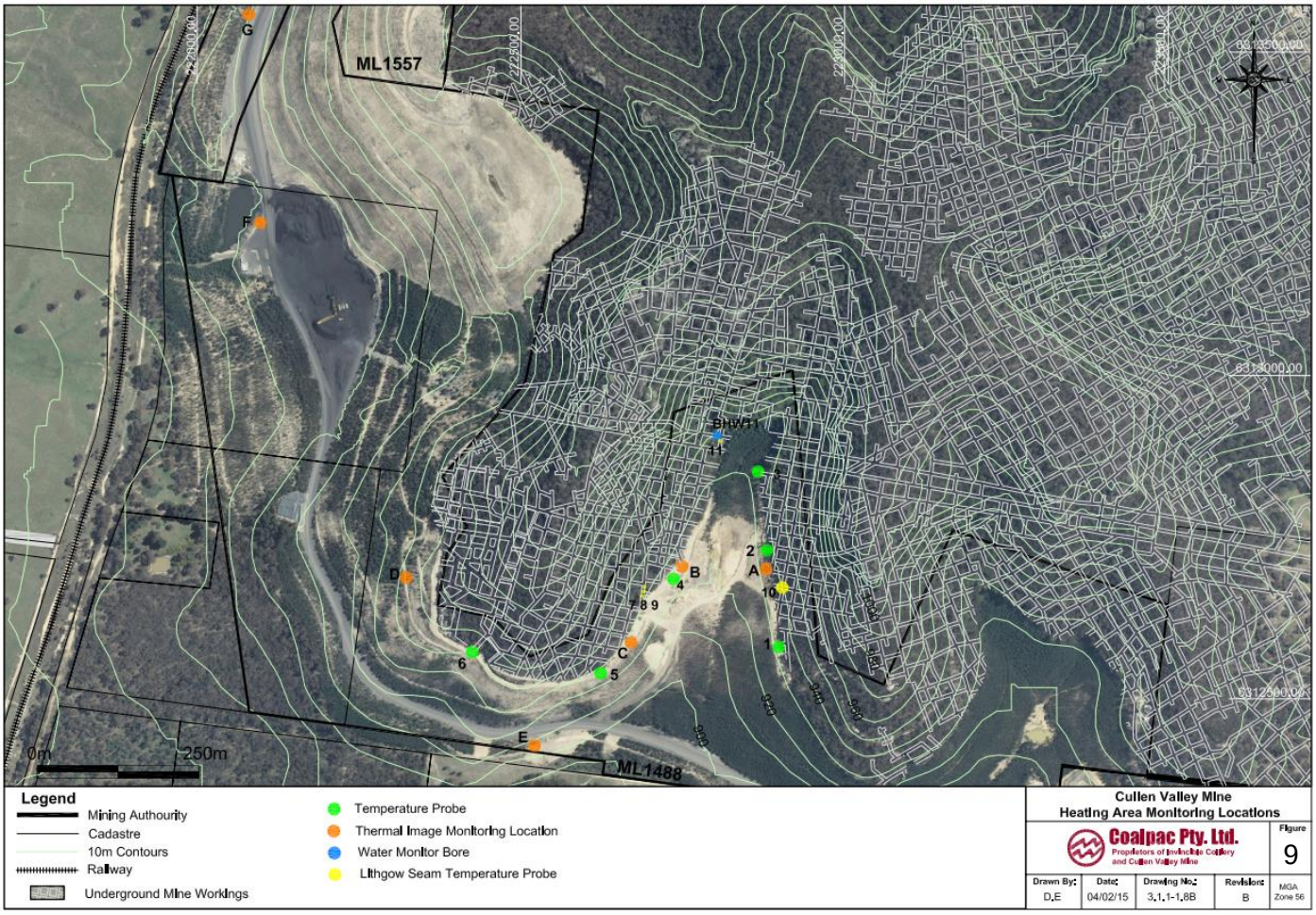
#### Sub-surface Water Study

During 2013 Coalpac installed a sub-surface water monitoring bore in the flooded underground mine workings of the Lithgow Seam in the main valley area affected by heating.

This borehole is identified as BHW11 and has enabled the determination of a more accurate sub-surface water level in the area most affected by heating. **Figure 9** shows the location of all monitoring boreholes.

Comparison of recorded sub-surface water levels show the level to be approximately 1.5m higher at BHW11 compared to the level in Tilley's Bore (the previously used reference point). This water level increase of 1.5m significantly improves the ability of the sub-surface water in the mine workings to act as a barrier for the potential migration of the fire to other areas of underground workings.

**Figure 9**
**Heating Area Monitoring Locations**




### 3.18.4 Temperature Monitoring

Coalpac has continued to record data from Boreholes 1 to 6. These boreholes have provided useful data over time and have helped to collect information that has enabled fact-based management actions to be planned and implemented.

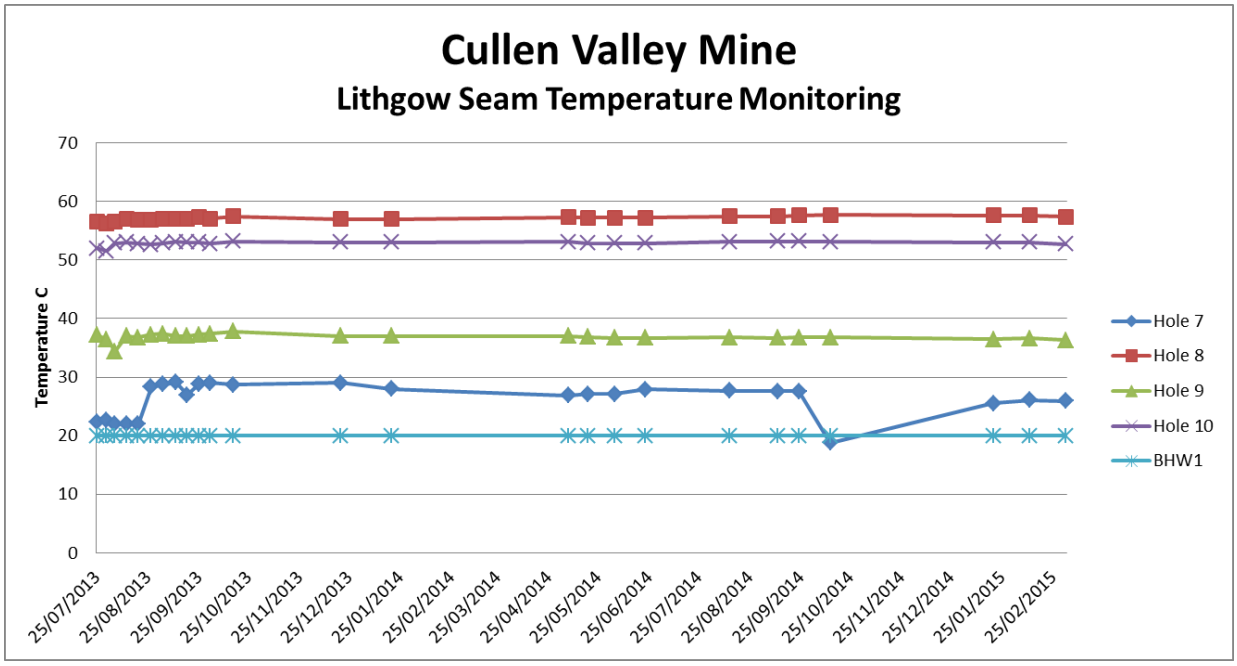
All the probes in Boreholes 1 to 6 have reached their use-by date and the data being recording is no longer reliable. It is OEC's recommendation that Coalpac cease recording from the current boreholes and replace selected ones (Current Boreholes 2, 5 and 6) with

more robust alternatives. These could be positioned within the current boreholes or close nearby in freshly drilled boreholes.

In mid-2013, Coalpac installed a new series of monitoring bores identified as Boreholes 7, 8, 9, 10 and 11. Boreholes 7 to 10 are located within the Lithgow Seam in the old underground workings and are fitted with temperature probes that are more robust than those used in Boreholes 1 to 6. Borehole 11 (BHW11) was installed to provide site specific water level data and augments the sub-surface water level information provided from the Tilley's Bore. It also records water temperature which has been a constant 15$^{o}$C ever since installation.

Monitoring data for the AEMR period is presented below in **Figure 10**.

**Figure 10**
**Lithgow Seam temperature monitoring results**




The data continues to support the presence of a Dormancy Stage in the sub-surface heating in the underground workings around boreholes 7, 8, 9 and 10. In addition, the presence of sub-surface water in this area also reduces the likelihood of the heating spreading into the adjacent underground workings in this location.

The OEC recommendations provided in the January and September reports of 2014 recommendations are under consideration.

### Capping Heating Affected Areas

This task as defined under the approved PoW is approximately 50% complete. Capping appears to have been successful and should be completed. Ongoing observation and monitoring will be required to confirm this observation.

A large section of the main heating valley has been capped and smaller isolated heating areas have been capped where observed within the open cut backfill sectors. To date all heating affected zones are located in areas mined prior to Coalpac purchasing the Mine in 2007.

**Plate 2**, **Plate 3** and **Plate 3** show the main valley after capping. The area has not been seeded yet where the effectiveness of capping is being monitored. To date the capping of these areas appears to have been effective. Overall the area has shown only localised “hot spots” which have been successfully remediated. Monitoring continues to confirm the effectiveness of the remediation.

The capping of the remaining areas identified in the Approved PoW can only be practically completed once more backfill material becomes available following the recommencement of operations.

**Plate 2**
**Capped area, no signs of active heating during thermal survey (May 2014)**

**Plate 3**
**Capped area against haul road (Aug. 2014)**

**Plate 4**
**Natural regeneration in main valley area (May 2014)**

### 3.18.5 Recommendations and Conclusions from OEC Report 2014

- The primary concerns identified in our September 2014 Report have not changed. They are
    - Control and minimise impact on the community;
    - Control and minimise environmental impact; and,
    - Avoid wastage of coal resource.

  These primary concerns should continue to underpin all actions as all parties proceed through the iterative process of developing and implementing strategies to manage and/or extinguish the fire.
- Providing there are no significant anomalous events or data recordings, it is recommended that Coalpac continue the current monitoring and recording activity.
- Depending on the outcome of that monitoring and recording, it may be appropriate to discuss the necessity for a more comprehensive Interim Review after the winter period of 2015.
- Develop and implement a ground temperature monitoring system to provide a better understanding of the temperature regime around areas of heat-affected vegetation.
- Commence detailed planning of a program to address the steep slope above the haul road. This would include how to handle the heating in the adjacent underground workings which are not flooded.

## 3.19 BUSHFIRE

### 3.19.1 ENVIRONMENTAL MANAGEMENT

Bushfire management strategies for Cullen Valley Mine are managed in accordance with the requirements of DA 200-5-2003 and are detailed in the Landscape Management Plan. These strategies are employed for preventing the occurrence and spread of any fire events that may impact on the site or in surrounding lands (i.e. Ben Bullen State Forest).

As such, measures are taken at Cullen Valley Mine to prevent the occurrence and spread of fire through proper maintenance of machinery and equipment, training of personnel and contractors, availability of equipment and water resources for firefighting purposes.

### 3.19.2 ENVIRONMENTAL PERFORMANCE

There were no bush fire events at Cullen Valley Mine during the reporting period.

### 3.19.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to bushfires during the reporting period.

### 3.19.4 IMPROVEMENTS

The management controls currently in place to mitigate potential bushfire hazards will continue to be adopted in 2015. Bushfire management will continue to be undertaken in accordance with the Landscape Management Plan.

## 3.20 SUBSIDENCE

There was no underground or highwall mining undertaken at Cullen Valley Mine during the 2014 reporting period and as such no subsidence management measures were implemented.

## 3.21 HYDROCARBON CONTAMINATION

### 3.21.1 ENVIRONMENTAL MANAGEMENT

All onsite hydrocarbon storages are fully bunded and appropriate to the volumes stored. There is no known hydrocarbon contamination within the Mining Lease area. Any materials collected within the bunded hydrocarbon storage areas are disposed offsite or bio-remediated on site as considered appropriate.

### 3.21.2 ENVIRONMENTAL PERFORMANCE

There were no hydrocarbon contaminated areas identified during the reporting period and as such no specific management controls or monitoring procedures were required. No significant hydrocarbon spills or other incidents requiring disposal of contaminated material occurred during the reporting period. All bulk storage facilities of hydrocarbon materials have been emptied at Cullen Valley Mine.

### 3.21.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to hydrocarbon contamination during the reporting period.

### 3.21.4 IMPROVEMENTS

The management procedures and measures in place during 2014 will be continued in 2015 as required.

## 3.22 GREENHOUSE GAS EMISSIONS

### 3.22.1 ENVIRONMENTAL MANAGEMENT

Greenhouse gas emissions for Cullen Valley Mine are monitored by Coalpac pursuant with DA 200-5-2003. Greenhouse gas emissions were significantly reduced following the cessation of mining operations and the site being placed in care and maintenance.

### 3.22.2 ENVIRONMENTAL PERFORMANCE

Coalpac is registered as part of the National Greenhouse and Energy Report (NGER) initiative. Coalpac submitted its annual NGER on 16 October 2014 in accordance with the scheme's requirements. A summary of the NGER data is included in **Table 15**.

**Table 15**
**Greenhouse Gas Emissions and Energy Data**

| | Greenhouse Gas Emissions | | | Energy | |
|---|---|---|---|---|---|
| | Scope 1 (t $CO_2$-e) | Scope 2 (t $CO_2$-e) | Total Scope 1 and Scope 2 (t $CO_2$-e) | Energy Consumed (GJ) | Energy Produced (GJ) |
| 2009-10 | 39,209 | 202 | 39,411 | 156,176 | 17,010,216 |
| 2010-11 | 11,714 | 229 | 11,943 | 156,937 | 17,687,268 |
| 2011-12 | 11,988 | 191 | 12,179 | 158,589 | 17,035,150 |
| 2012-13 | 4,095 | 40 | 4,135 | 54,598 | 5,041,960 |
| 2013-14 | - | - | - | - | - |

No activities over the NGERS reporting period.

### 3.22.3 REPORTABLE INCIDENTS

There were no reportable incidents relating to greenhouse gas emissions during the reporting period.

### 3.22.4 IMPROVEMENTS

The management procedures and measures in place during 2014 will be continued in 2015. Mandatory reporting under the Commonwealth NGER Scheme will continue.

## 3.23 PUBLIC SAFETY

Procedures for the maintenance of public safety are as follows:

- The main entrance being locked after hours;
- The private haul road has gates which are locked outside of operating hours;
- All visitors and members of the public are required to report to the main office at Cullen Valley Mine, receive a visitor tag and are to be escorted to and from the mine;
- Key areas of the site are fenced as appropriate;

- Warning signs are positioned at the front gate of the mine and within the eastern side of the site within the Ben Bullen State Forest;
- At times when public access is required, inductions are undertaken and inspections supervised by Coalpac personnel; and
- There were no public safety issues relating to the mine during the reporting period.

# 4 COMMUNITY RELATIONS

## 4.1 COMMUNITY CONSULTATIVE COMMITTEE

Coalpac maintains a Community Consultative Committee (CCC) comprising representatives from the local community, Lithgow City Council (LCC) and Coalpac. The CCC meeting minutes are publicly available via the Company's Website.

Due to the suspension of operations there were no formal CCC meetings held in 2014. However regular contact and consultation with CCC members was undertaken throughout the reporting period.

### 4.1.1 COMMUNITY CONSULTATION

Ongoing community consultation was undertaken by Coalpac during the reporting period for the existing operations for the proposed Modifications. There was extensive consultation with local community groups, local government, State Government agencies and the NSW Government in the reporting period. On 15 & 16 April 2014 community information sessions were held in the local Cullen Bullen Progress Hall to assist members of the community in gaining a greater understanding of Coalpac proposed Modifications.

A Planning Assessment Commission meeting was held at the Progress Association Hall in Cullen Bullen on the 17 September 2014. There were a total of 34 speakers from the local community, Lithgow City Council, local industry, local interest groups and broader environmental interest groups.

On 17 October 2014 the NSW Planning and Assessment Commission issued their determination report refusing the proposed Modification applications.

### 4.1.2 SPONSORSHIP

There was no sponsorship provided during the reporting period.

### 4.1.3 COMMUNITY NEWSLETTER

Two community newsletters were published and widely distributed in April and July 2014. This served to inform the community of recent activities at the mine and the proposed Modifications. A full copy of both community newsletters distributed during the reporting period is included in **Appendix D & E**.

## 4.2 ENVIRONMENTAL COMPLAINTS

All stakeholder and community complaints regarding Cullen Valley Mine are documented, with appropriate actions taken as soon as possible to determine the likely cause of the

complaint and all possible corrective actions to resolve the problem and prevent its recurrence. Complaints are recorded in a database which is retained at the mine office.

During the reporting period, a total of three complaints were received from two complainants. The complaints received during the reporting period related to water and odour, specifically in the region of the noise bund and subsurface heating zone. All complaints were addressed immediately and resolved quickly. A comparison with the previous reporting period indicates a decrease in the number of complaints (see **Table 16**).

**Table 16**
**Community Complaints**

| Complaint Type | Number Received 2013 | Number Received 2014 |
|---|---|---|
| Noise | 1 | 0 |
| Air Quality (Dust) | 2 | 0 |
| Blasting | 0 | 0 |
| Traffic | 0 | 0 |
| Water | 0 | 2 |
| Other | 2 | 1 |
| **Total** | **5** | **3** |

# 5 REHABILITATION

There were no rehabilitation activities carried out at Cullen Valley Mine during the reporting period. Rehabilitation undertaken to date and the active mining areas as at the end of 2014 are illustrated in **Figure 11**.

The Rehabilitation Cost Estimate (RCE) is based on the current disturbance as at 27 February 2014 and is similar to that shown in **Figure 11**. The completed RCE and associated rehabilitation bond calculations have been provided to DRE separately.

## 5.1 INFRASTRUCTURE

A contractor crushing plant was the only piece of infrastructure removed during the reporting period.

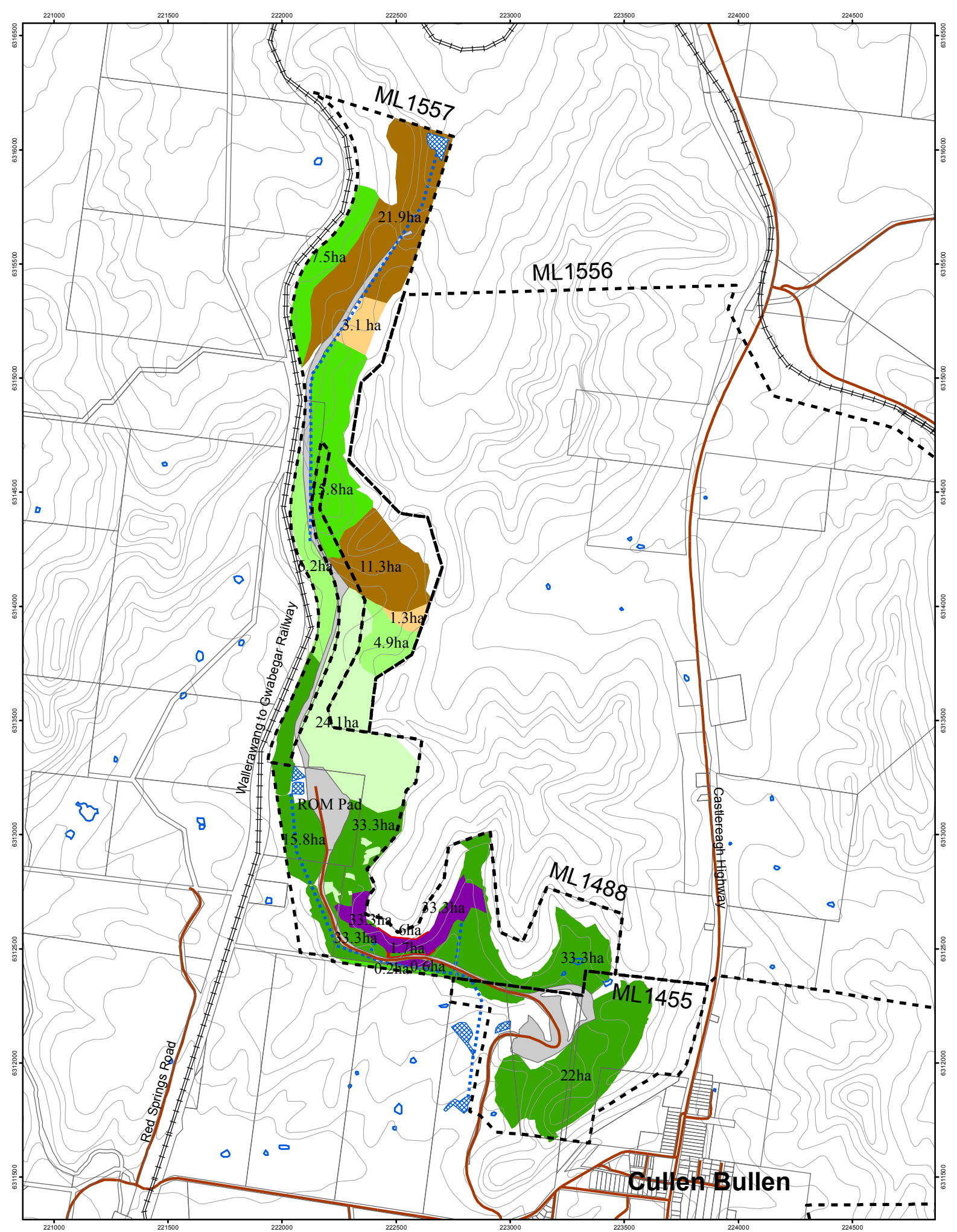
## 5.2 REHABILITATION OF DISTURBED LAND

Where practicable, areas mined are progressively backfilled on a continual basis to form a profile similar to the pre-mining landscape.

**Plate 5** and **Plate 6** show the successful established rehabilitation undertaken at the Cullen Valley Mine showing strong canopy growth and groundcover development respectively.

**Plate 5**
**Strong canopy growth in 2004 rehabilitation, May 2014**

**Plate 6**
**Groundcover growth in 2004 rehabilitation, Sept. 2014**




# Rehabilitation Activities

**Legend**

- Railway
- Invincible Mining Leases
- Cadastre
- Road
- 20m Contours
- Creek
- Conveyor
- Water Pipeline
- Water Management Structure
- Mine Infrastructure: 17.9ha
- Sub Surface Heating Area
- External Dams
- 2009 Seeded Rehabilitation: 27.2ha
- 2011 Seeded Rehabilitation: 11.1ha
- 2012 Seeded Rehabilitation: 23.4ha
- Established Rehabilitation: 71.1ha
- Shaped and Topsoiled Dumps (Unseeded): 4.4ha
- Unshaped Dumping Areas: 33.2ha
- Slope > 18 Degrees: 1.7ha

Cullen Valley Mine

Coalpac Pty Ltd
Proprietors of Invincible Colliery and Cullen Valley Mine

A3 Scale 1:20,000

Coordinate System: GDA 1994 MGA Zone 56 Projection: Transverse Mercator

File:A399-D01-MP-0010_1-Cullen_RehabPlan-20150902

The rehabilitation area is made up of a series of parcels of land which are at various stages of being progressively rehabilitated back to a self-sustainable native ecosystem. The principal re-vegetation technique currently employed is direct seeding using native tree and shrub species. The proposed final land form aims to emulate the pre-mining environment and to enhance local and regional ecological linkages across the site and surrounding areas.

There has been successful seed strike within rehabilitation undertaken to date. Regular rehabilitation monitoring undertaken at Cullen Valley Mine shows that rehabilitated areas are progressing toward target levels.

The use of clay subsoil and topsoil material within the areas rehabilitated, increases soil stability, seed germination and provides a suitable plant growth medium. Clay material is generally spread at a depth between 1 – 2m over shaped slopes. Once clay material has been spread over the shaped area, topsoil is generally emplaced at a minimum depth of 0.10m over shaped slopes and within contour drains. The variability of subsoil and topsoil depths within the open cut mining area may result in variability on these shaped slopes, although it is generally controlled through the use of stockpiled material from previously mined areas.

After the topsoil works are complete the final ripping and seeding program can commence. The ripping is carried along the contour and is designed to create deeper furrows to minimise the overland flow of water, promote infiltration and capture seed.

A summary of the disturbed and rehabilitated areas at Cullen Valley Mine is included in **Table 17**. Rehabilitation in the next reporting period (2015) is dependent on the recommencement of mining operations. For the purpose of this report, no rehabilitation is proposed for the next reporting period. If the recommencement of mining operations is successful, rehabilitation will be in accordance with the revised Cullen Valley Mine MOP submitted to DRE in March 2015 for approval. Rehabilitation undertaken to date and the open mining areas as at the end of 2014 is illustrated in **Figure 11**.

**Table 17**
**Rehabilitation Summary**

| | | Cumulative Area Affected (hectares) | | |
|---|---|---|---|---|
| | | To Date | Last Report | Next Report (estimated) |
| **A: MINE LEASE AREA** | | | | |
| **A1** | **Mine Lease(s) area** | 1059 | 1059 | 1059 |
| **B: DISTURBED AREAS** | | | | |
| **B1** | **Infrastructure Area** | 17.9 | 17.9 | 17.9 |
| **B2** | **Active Mining Area** | 0 | 0 | 0 |
| **B3** | **Waste Emplacements** | 17.6 | 17.6 | 17.6 |
| **B4** | **Tailings Emplacements** | 0 | 0 | 0 |
| **B5** | **Shaped Waste Emplacement** | 18.7 | 18.7 | 18.7 |
| **ALL DISTURBED AREAS** | | 54.2 | 54.2 | 54.2 |
| **C: REHABILITATION PROGRESS** | | | | |
| **C1** | **Total Rehabilitated Area** | 132.6 | 135.7 | 135.7 |
| **D: REHABILITATION ON SLOPES** | | | | |
| **D1** | **10 to 18 Degrees** | 127.2 | 127.2 | 127.2 |
| **D2** | **Greater than 18 Degrees** | 1.7 | 1.7 | 1.7 |
| **E: SURFACE OF REHABILITATED LAND** | | | | |
| **E1** | **Pasture and Grasses** | 0 | 6 | 0 |
| **E2** | **Native Forest / Eucalypt** | 132.6 | 135.7 | 135.7 |
| **E3** | **Plantations and Crops** | 0 | 0 | 0 |
| **E4** | **Other** | 0 | 0 | 0 |

Seeding rates for tree species in rehabilitation were applied at a rate of 7.5kg per hectare with Granulock 15 fertiliser applied at a rate of 100kg per hectare. Within the contour drains pasture species were applied at a rate of 68kg per hectare with Granulock 15 fertiliser applied at a rate of 200kg per hectare. The standard seed species mix used is summarised below in **Table 18**.

**Table 18**
**Rehabilitation Seed Species List**

| Species | Common Name |
|---|---|
| **Tree / Shrub Species** | |
| Eucalyptus tereticornis | Forest Red Gum, Blue Gum |
| Euc. rossii | Tableland Scribbly Gum |
| Euc. dalympleana | Mountain Gum |
| Euc. radiate | Narrow-leaved peppermint, Forth River Peppermint |
| Euc. globoidea | White Stringybark |
| Euc. albens | White Box |
| Euc. crebra | Narrow-leaved Ironbark |
| Euc. sieberi | Silvertop Ash, Black Ash |
| Euc. obliqua | Tasmania Oak |
| Euc. microcarpa | Grey Box |
| Euc. rubida | Candle Bark Gum |
| Euc. dives | Broad-leaved Peppermint |
| Euc. blakelyi | Blakelys Red Gum |
| Euc. punctata | Grey Gum |
| Euc. pauciflora | Snow Gum, White Gum |
| Euc. viminalis | Manna Gum, Ribbon Gum |
| Acacia buxiflolia | Box-leaf Wattle |
| A. dealbata | Silver Wattle |
| A. decurrens | Black Wattle |
| A. penninervis | Hickory Wattle, Mountain Hickory |
| A. spectabilis | Mudgee Wattle |
| A. rubida | Red Stemmed Wattle |
| Dodonaea cuneata | Sticky Hop-bush, Wedge-leaf Hop Bush |
| Callistemon linearis | Narrow Leaved Bottlebrush |
| Allocasuarina distylla | Scrub she-oak |
| Leptospermum polygalifolium | Tantoon |
| Leptospermum flavescens | Yellow tea tree |
| Banksia spinulosa | Hairpin Banksia |
| **Pasture Seed** | |
| Coolabah Oats | Wimmera Rye |
| Couch | Perennial Rye |
| Japanese Millet | Green Panic |
| Kikuyu | Phalaris |
| Seaton Park Clover | |

During 2014 additional maintenance activities were conducted on rehabilitated lands in the form of erosion control and soil treatments (see **Table 19**).

**Table 19**
**Maintenance Activities on Rehabilitated Land**

| NATURE OF TREATMENT | Area Treated (ha) | | Comment/control strategies/ treatment detail |
|---|---|---|---|
| | Report period | Next period | |
| **Additional erosion control works** (drains re-contouring, rock protection) | 0 | 10 | Additional silt fencing and hay bales positioned in water management areas. Focus on the noise bund. |
| **Re-covering** (detail - further topsoil, subsoil sealing etc) | 0 | 15 | Reshaping, capping and additional drainage works (see Section **3.18.3**). |
| **Soil treatment** (detail - fertiliser, lime, gypsum etc) | 0 | 0 | |
| **Treatment/Management** (detail - grazing, cropping, slashing etc) | 0 | 0 | |
| **Re-seeding/Replanting** (detail - species density, season etc) | 0 | 0 | |
| **Adversely Affected by Weeds** (detail - type and treatment) | 0 | 15 | Weeds targeted include**:** Broom and Sifton Bush. Refer to **Section 3.11**. |
| **Feral animal control** (detail - additional fencing, trapping, baiting etc) | 0 | 0 | |

Areas mined are progressively backfilled on a continual basis to form a profile similar to the pre-mining landscape. The following aerial photo (**Plate 7**) demonstrates the transitional progress from mining to rehabilitated land at the Cullen Valley Mine.

**Plate 7**
**Progressive Rehabilitation at Cullen Valley Mine, February 2014**

### 5.3 REHABILITATION TRIALS AND RESEARCH

Coalpac will continue to monitor and assess the success of rehabilitation undertaken to date. In addition to existing monitoring, Coalpac has implemented a nesting box trial which provides supplementary habitat for native fauna species in rehabilitated areas. The nesting box trial consists of four plots which contain six nesting boxes per plot. Two plots are located at Cullen Valley Mine and a further two plots are located at Invincible Colliery. The plots have been located in different age classes of rehabilitated land including 1 year, 6 year and 12 year old rehabilitated areas. A further plot has been located in adjacent native woodland as a reference site.

The type of nesting boxes selected for the trial were identified as being suitable for native species that occur in the local area. Specifically the nesting boxes were selected to provide supplementary habitat for the Squirrel glider, Gang-gang Cockatoo and other parrot species, Long eared pied Bat and the Kookaburra.

The trial was implemented in June 2013 and will be monitored on an annual basis to assess its level of success and utilisation by native fauna species. The nest box trial has yielded positive results thus far and is considered a success.

### 5.4 FURTHER DEVELOPMENT OF FINAL REHABILITATION PLAN

Any improved developments and changes to the Final Rehabilitation Plan will be undertaken in consultation with relevant stakeholders and DRE.

## 6 ACTIVITIES PROPOSED IN 2015

### 6.1 MINING

The mine will remain on care and maintenance until the necessary approvals can be gained to recommence mining operations.

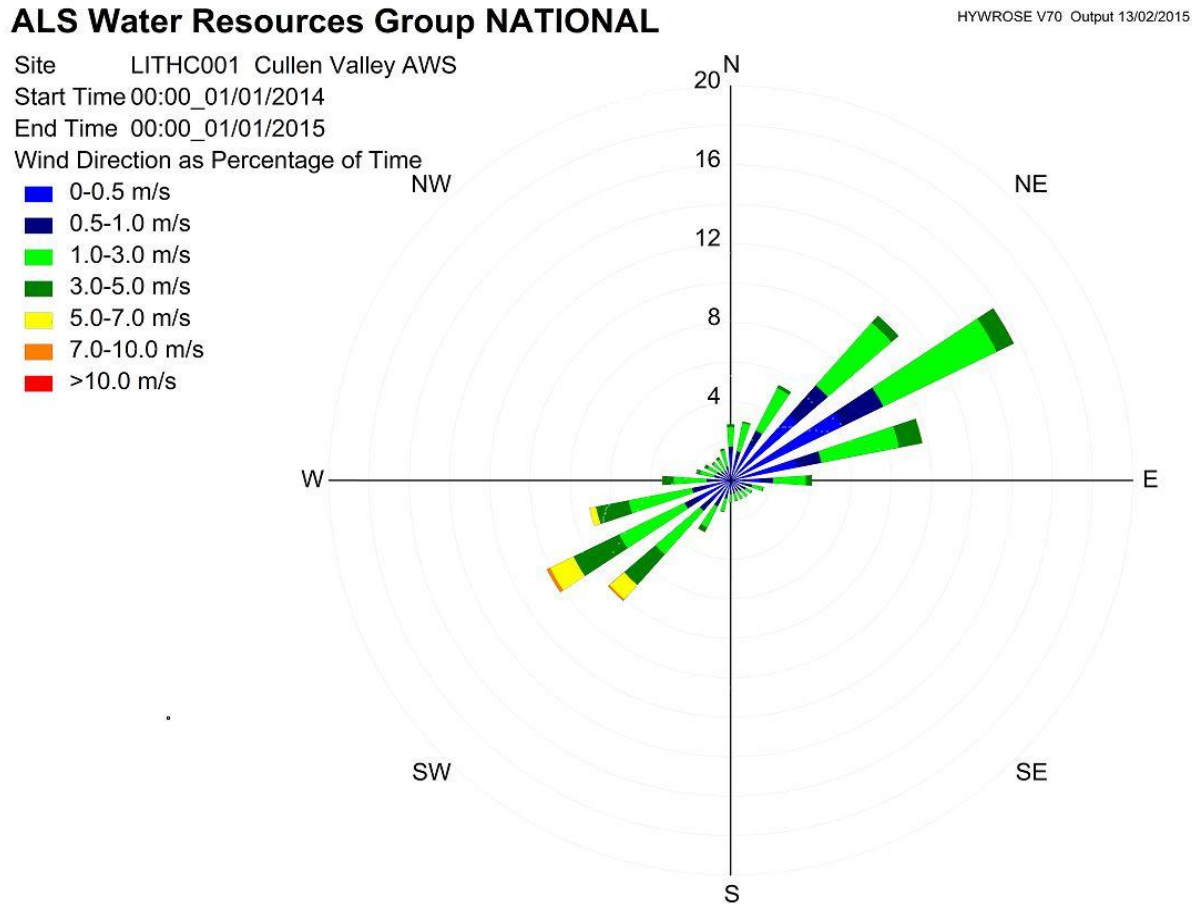
Coalpac is currently preparing a revised MOP for consideration and approval. The revised MOP is proposed to be submitted in quarter 1 2015. If successful, open cut mining operations will recommence in the north-west corner of pit 106. Mining in 2015 is contingent upon the necessary approvals being gained in a timely fashion.

### 6.2 REHABILITATION

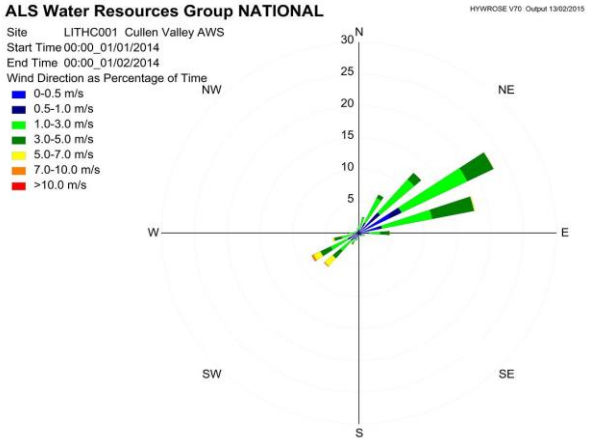
Any additional rehabilitation works will be undertaken in accordance with the approved Care and Maintenance Mine Operations Plan and will depend largely on the timing of future mining. If future mining applications are successful, rehabilitation works will be undertaken in accordance with the revised Cullen Valley Mine MOP.

# **Appendix A** Cullen Valley Mine Wind Roses 2014

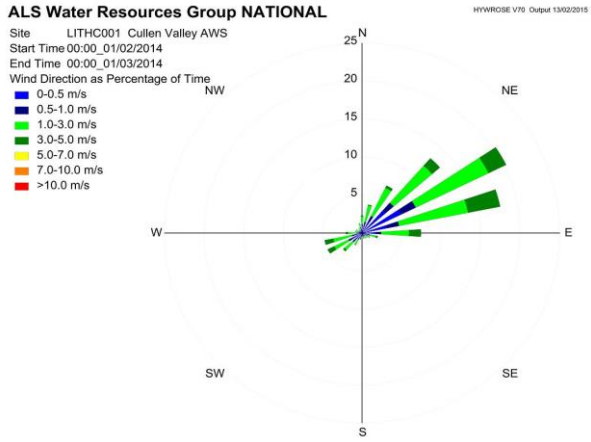
# 2014 Wind Rose



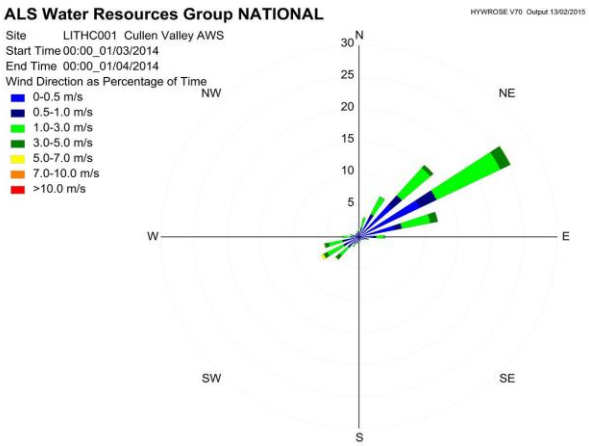
January 2014



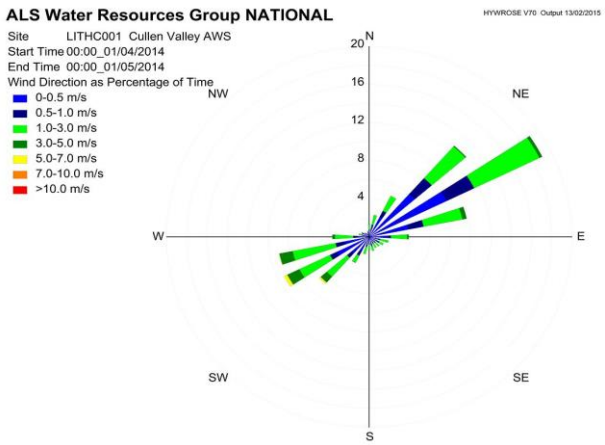

February 2014



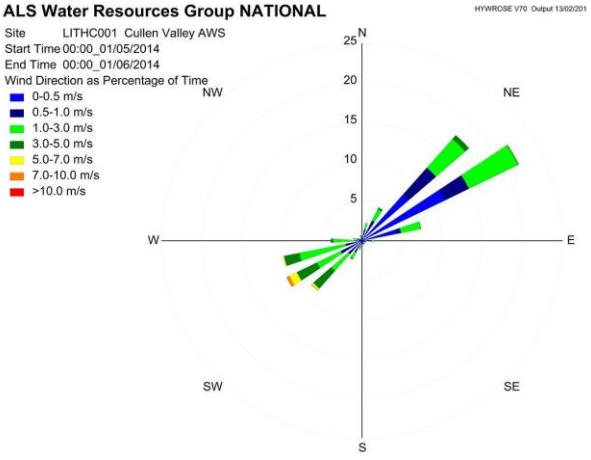

March 2014



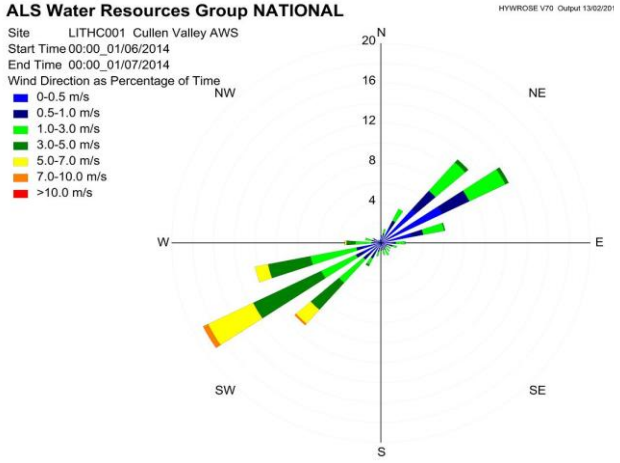

April 2014



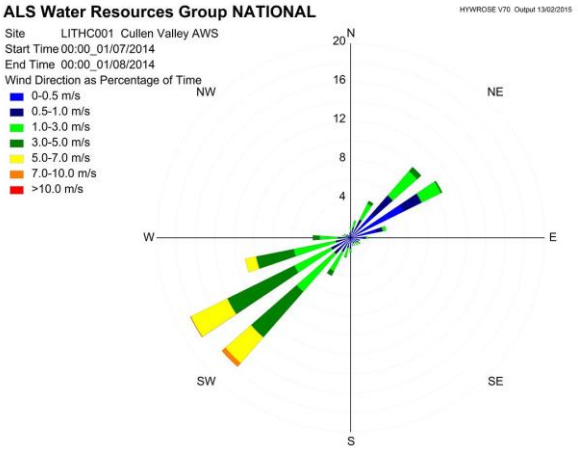
May 2014



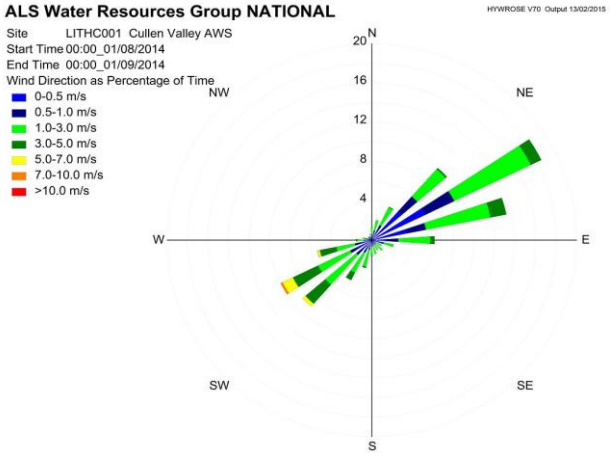

June 2014



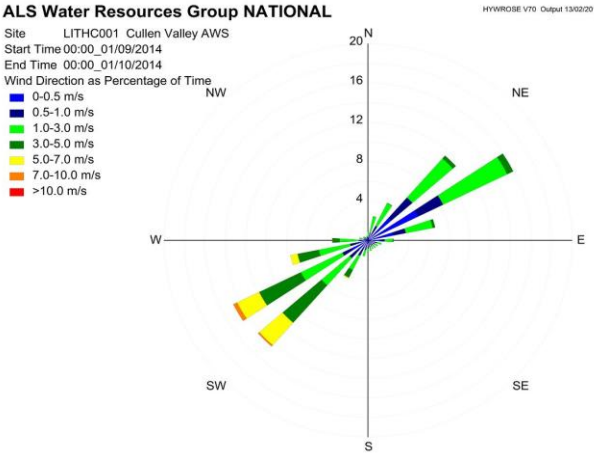

July 2014



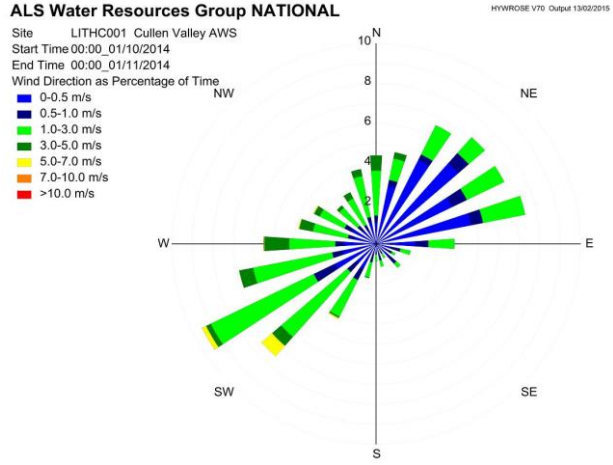

August 2014



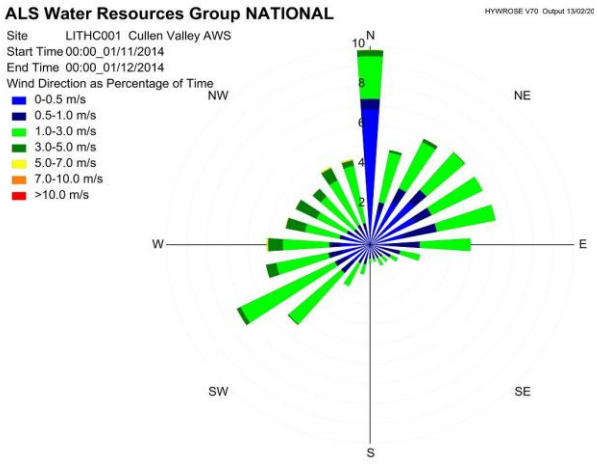
September 2014



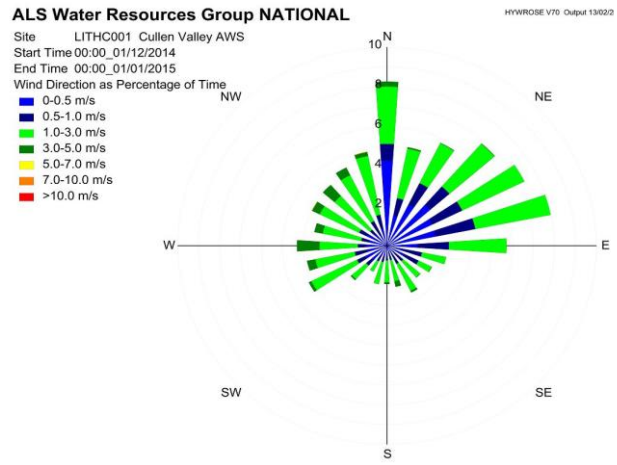

October 2014




November 2014




December 2014



# **Appendix B** Cullen Valley Mine HVAS and TSP results

| HV02 | | |
|---|---|---|
| **Date** | **Particulate Matter (<10µg/m$^3$)** | **TSP (µg/m$^3$)** |
| 6/01/14 | 13.0 | 32.5 |
| 14/01/14 | 4.0 | 10.0 |
| 20/01/14 | 15.0 | 37.5 |
| 23/01/14 | 2.0 | 5.0 |
| 29/01/14 | 6.0 | 15.0 |
| 4/02/14 | 8.0 | 20.0 |
| 11/02/14 | 5.0 | 12.5 |
| 18/02/14 | 6.0 | 15.0 |
| 25/02/14 | 4.0 | 10.0 |
| 28/02/14 | <1 | <2.5 |
| 7/03/14 | 4.0 | 10.0 |
| 12/03/14 | 6.0 | 15.0 |
| 18/03/14 | 3.0 | 7.5 |
| 25/03/14 | 7.0 | 17.5 |
| 28/03/14 | 3.0 | 7.5 |
| 8/04/14 | 4.0 | 10.0 |
| 11/04/14 | 6.0 | 15.0 |
| 17/04/14 | 4.0 | 10.0 |
| 24/04/14 | 5.0 | 12.5 |
| 29/04/14 | 1.0 | 2.5 |
| 7/05/14 | 2.0 | 5.0 |
| 13/05/14 | 5.0 | 12.5 |
| 19/05/14 | 5.0 | 12.5 |
| 23/05/14 | 6.0 | 15.0 |
| 29/05/14 | 2.0 | 5.0 |
| 4/06/14 | 3.3 | 8.3 |
| 12/06/14 | 10.0 | 25.0 |
| 17/06/14 | 3.5 | 8.8 |
| 25/06/14 | 13.4 | 33.5 |
| 30/06/14 | 5.7 | 14.3 |
| 4/07/14 | 6.0 | 15.0 |
| 11/07/14 | 6.0 | 15.0 |
| 16/07/14 | 5.0 | 12.5 |
| 22/07/14 | 4.0 | 10.0 |
| 30/07/14 | 2.0 | 5.0 |
| 4/08/14 | <1 | <2.5 |
| 11/08/14 | 6.0 | 15.0 |
| 15/08/14 | 4.0 | 10.0 |
| 21/08/14 | 4.0 | 10.0 |
| 28/08/14 | 2.0 | 5.0 |
| 3/09/14 | 3.0 | 7.5 |

| | | |
|---|---|---|
| 10/09/14 | 1.0 | 2.5 |
| 17/09/14 | 3.0 | 7.5 |
| 24/09/14 | 3.0 | 7.5 |
| 26/09/14 | 1.0 | 2.5 |
| 3/10/14 | 5.0 | 12.5 |
| 9/10/14 | 3.0 | 7.5 |
| 16/10/14 | 5.0 | 12.5 |
| 23/10/14 | 3.0 | 7.5 |
| 31/10/14 | 7.0 | 17.5 |
| 30/11/14* | 34.1 | 85.3 |
| 6/12/14 | 5.2 | 13.0 |
| 12/12/14 | 6.4 | 16.0 |
| 18/12/14 | 15.7 | 39.3 |
| 24/12/14 | 12.8 | 32.0 |
| 30/12/14 | 31.0 | 77.5 |
| 24h Maximum | 31.0 | N/A |
| **EPL 24h Limit** | **50** | N/A |
| Annual Average | 5.9 | N/A |
| **EPL Annual Average Limit** | **30** | **90.0** |

* Filter paper 9034380 has been in PM10 unit for 30 days equal to 5 run periods

**Appendix C** Interim Review Heating Area Plan of Works (September 2014)

**Olsen Environmental Consulting**
ACN 075 195 792
ABN 94 075 195 792
PO BOX 101 FIGTREE NSW 2525
Phone 02 42251164 Mobile 0417 219293
E-mail davidolsen@ocg.net.au

Environmental Management Advice
Planning Approvals
EPA Licensing Matters
Environmental Impact Statements Managed and Prepared
Old Mine or Construction Sites Restored
Environmental Training Courses Prepared and Presented
Environmental Management Systems Prepared and Implemented
Environmental Monitoring

22nd September, 2014 FS13 P84 4588

Mr B Eastwood
Environmental Manager
Coalpac Invincible Colliery
Castlereagh Highway
CULLEN BULLEN NSW 2790

Dear Ben,

**Re: Cullen Valley Plan of Works Interim Report.**

Thank you for sending through the various data files, thermal camera survey report dated August 2014 and organising the site inspection on 9th September, 2014.

This letter provides a summary overview of my observations based on the data and the site inspection and subsequent de-brief. It should be read in conjunction with my Interim Review of the Heating Area Plan of Works dated February 2014.

**Data Files and Thermal Camera Report**

I confirm that based on the data you have sent it is apparent that the approach to the treatment of the heating area is being carried out generally in accordance with the agreed Plan of Works approved by the Division of Resources and Energy (DRE).

All the data and thermal camera output reconfirm the reasoned and results-based approach to managing and controlling the heating at Cullen Valley Mine is proving effective. You should continue on with this same approach, only modifying actions as required when results demonstrate that change is required and when there is adequate information to generate suitable response actions.

**Figure 1** identifies various heat affected/treated locations and the following comments refer to these locations.

The thermal camera results from Area B are encouraging. The cold ambient temperatures experienced that day would have been ideal to demonstrate the effectiveness of the capping. Any areas where heating was still occurring would have shown up very well. Additional time and ongoing monitoring is required to confirm these encouraging results.

The previously treated heating areas in the noise bund (Area E) continue to show no signs of heating re-occurring.

The specific treatment for Area C and Area D should be developed following further monitoring and observation as work on re-aligning the road (Area A) is planned/undertaken and the future performance of the treatments of Areas B and E are monitored.

Specific treatments should be developed for Area F based on operational knowledge and monitoring of the performance of currently treated areas.

Ongoing monitoring is required to define any specific locations where heating is still occurring subsequent to treatment by capping. Given the quite complex nature of the backfill, we have always expected that there will be such occurrences. However, they can be treated readily by revisiting the identified hot sites and undertaking maintenance measures deemed suitable for the specifics of that area.

It is beneficial that we are building up good qualitative and quantitative data about the local groundwater regime. This gives us an understanding of the current situation, providing a sound basis for deciding appropriate actions to manage the heating. In addition it gives a confident basis for measuring the success of any actions.

**Site Inspection 9th September 2014**

This inspection was undertaken by inspectors from DRE Greg Kininmonth and Chris Hammersley, Coalpac employees Ian Follington and Ben Eastwood and me from Olsen Environmental Consulting.

An overview of the current status of operations was given using a presentation dated 3rd September 2014 and the August Thermal Camera Report followed by a question and answer session before undertaking the site inspection.

We walked over the treated areas and while doing so I noted the following:

- The capped areas (Area B on **Figure 1**) looked sound and there was no direct evidence of reheating. Small traces of odour could be detected from time to time but the source was neither obvious nor large.

- The heating-affected vegetation to the immediate east of the capped area (approximately on the boundary of Areas C, B and R on **Figure 1**) appeared to be less stressed than it was in January 2014 during my last inspection. This is supported by the thermal camera results from early August discussed above. This tends to indicate that the heating effect on the vegetation was a temporary event associated with venting of hot gas rather than a combustion event in the material directly underneath the affected vegetation.

- During the walk around there was general discussion of the possibility of developing a ground temperature monitoring system to clarify ground temperature conditions adjacent to heat-affected vegetation. It would be worthwhile to develop a system of this type to provide heating data that enables a better explanation of the likely causes (and hence potential management actions) for areas of vegetation affected by heat.

- The top-soiled areas within Area B showed early signs of vegetation regeneration even though they have not been seeded. The new plants were predominantly acacia species although there were a good number of eucalypt seedlings adjacent to the natural bush areas.

- The steep face immediately above the haul road that has not been capped (C1 and D on **Figure 1**) appeared to be less active than it was in January 2014. There was some evidence of vegetation regrowth, indicating less heating activity.

- The backfilling along the interface of the highwall and the overburden was working well. Especially along the eastern sections and anywhere above flooded underground workings (Area B). There was evidence of emissions over the non-flooded workings (Areas C and D) which are expected. This practice should be continued.

**Recommendations**

1. Providing there are no significant anomalous events or data recordings, I recommend that Coalpac continue the current monitoring and recording activity.

2. Depending on the outcome of that monitoring and recording, it may be appropriate to discuss the necessity for a more comprehensive Interim Review after the winter period of 2015.

3. Develop and implement a ground temperature monitoring system to provide a better understanding of the temperature regime around areas of heat-affected vegetation.

4. Commence detailed planning of a program to address the steep slope above the haul road (Areas A, C, C1 and D on **Figure 1**). This would include how to handle the heating in the adjacent underground workings which are not flooded.

I have appreciated how you have kept me informed of developments and remain confident that having initiated a facts-based approach to treating the heat affected area and adjusting a Plan of Works as required, that we are on the appropriate path to managing this heating event.

Yours faithfully,

David Olsen
Environmental Manager

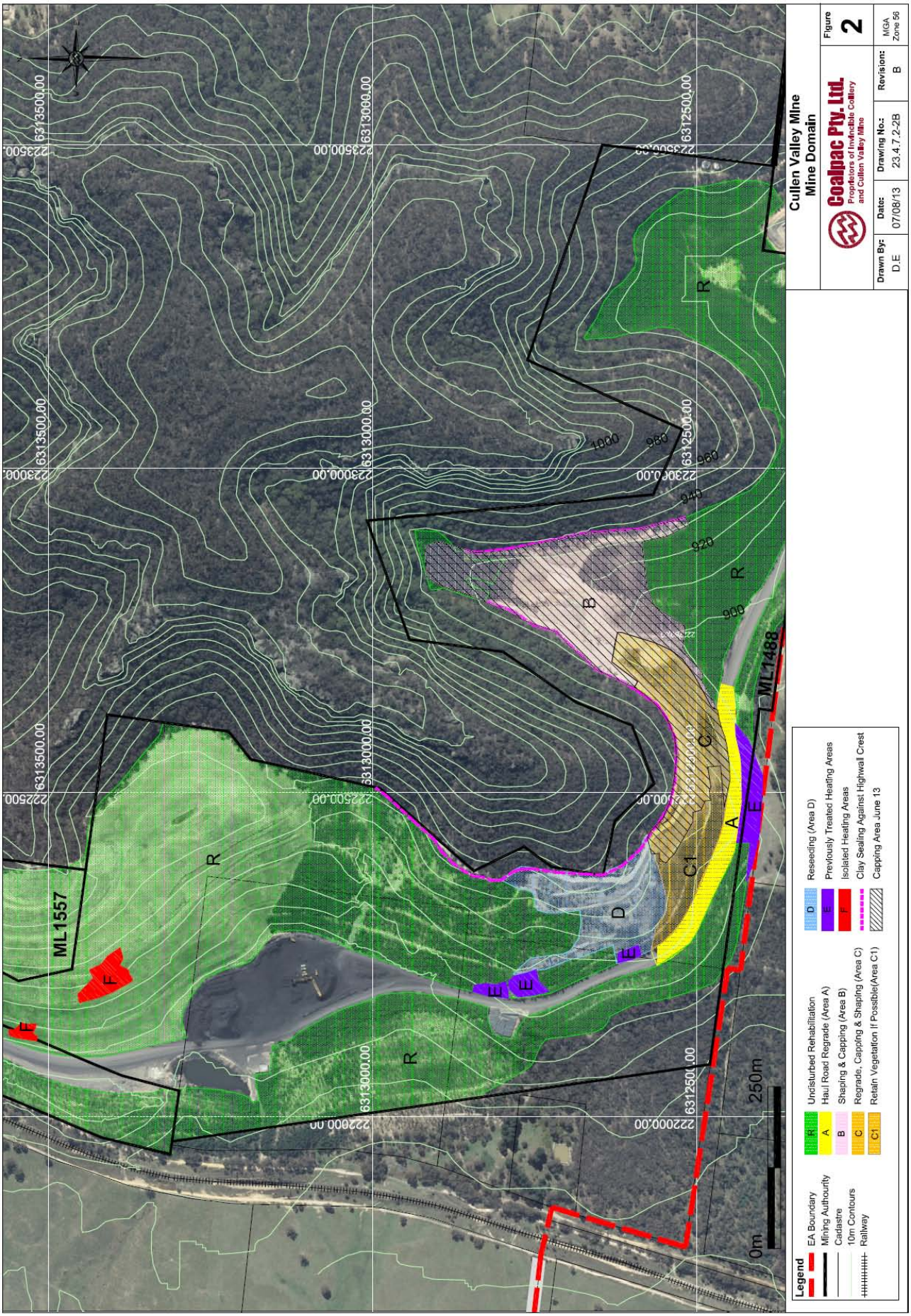



**Figure 1.**
**Cullen Valley Mine Domains**

**Photograph 1. Area B looking north 8/9/14**

**Photograph 2. Heat affected Vegetation. Areas at Boundary of Areas B, C and R 8/9/14**

**Photograph 3. Area C with Haul Road Noise Wall in mid ground 8/9/14**

**Photograph 4. Area B looking east 8/9/14**

**Appendix D** Coalpac Community Newsletter, April 2014

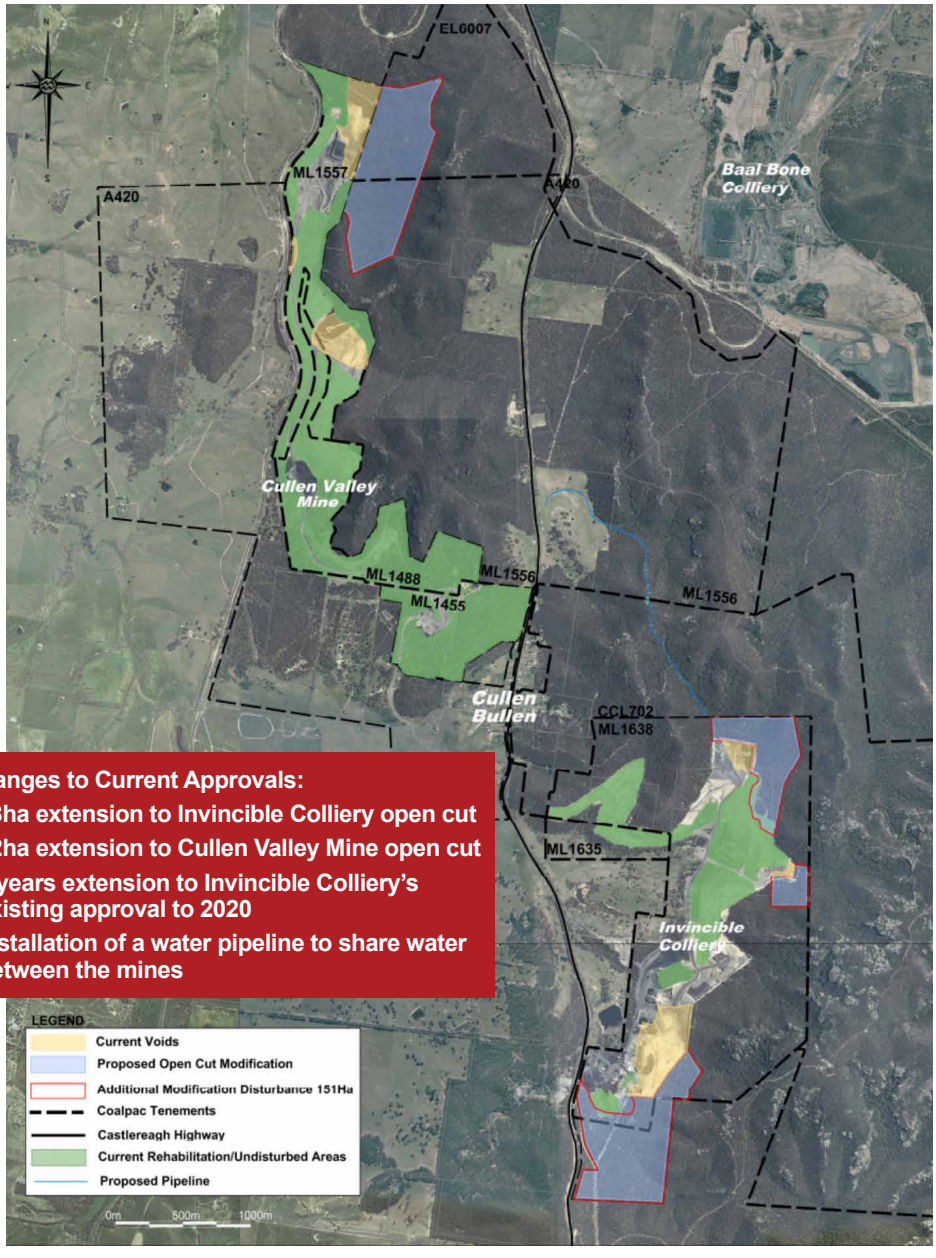
COALPAC

April 2014

# Community Newsletter

Welcome to the sixth edition of the Coalpac Community Newsletter. This edition is to outline the proposed Modifications being sought for both our Cullen Valley Mine and Invincible Colliery operations. Your feedback is important to us. If you have questions, please call 02 6359 0600.

## Proposed Modifications to Current Approvals




**Changes to Current Approvals:**

- **88ha extension to Invincible Colliery open cut**
- **62ha extension to Cullen Valley Mine open cut**
- **4 years extension to Invincible Colliery's existing approval to 2020**
- **Installation of a water pipeline to share water between the mines**

Coalpac is seeking approval for two Modifications to allow the continuation and extension of its currently approved open cut and highwall mining operations at Invincible Colliery and Cullen Valley Mine.

The Modifications will not change the operating hours **(i.e - no night time operations)** and **will not change the currently Approved limits for**:

- Production (up to 2.2Mt per annum combined)
- Employee numbers
- Noise levels
- Air quality and dust levels
- Blasting vibration & frequency
- Coal transport

Community feedback will continue to be sought as this proposal moves through the planning approval process.

You can view our Environmental Assessment at:

**www.majorprojects.planning.nsw.gov.au**

A paper copy will be available for review at Invincible Colliery reception, the Royal Hotel, Cullen Bullen and Lithgow City Council offices.

## Next Steps

The Environmental Assessment outlining the details of the proposed Modifications is expected to be placed on public exhibition in early April for 30 days.

## Changes at Coalpac

Coalpac's employees and their families have been through a very difficult period and we have had to make further redundancies as a result of entering Voluntary Administration. We continue to work through the Administration process and the future of the company and its employees is reliant upon approval being gained for the proposed Modifications.

If you have any questions regarding the proposed Modifications please contact Ian Follington, our CEO, **on: 02 6359 0600 or ifollington@cetresources.com**

## Why the Modifications Should Be Approved

- Provides much needed employment to the local area.
- Ensures the continued supply of competitively priced coal to Mount Piper Power Station to support lower electricity costs for the State.
- Supports Cullen Bullen community directly through a Voluntary Planning Agreement.
- Supports the continued operation of the local power stations; a key part of the local economy.
- Avoids threatened & endangered plant & animal communities in Ben Bullen State Forest.
- Includes a number of measures to minimise the environmental impacts of the proposed mining extensions.
- Allows for better rehabilitation outcomes for both sites and the establishment of a stable rehabilitated landscape at the end of mining operations.
- Same activities as already approved under the same approval conditions.
- Good long term track record on community impacts.
- Large land offset package offered to compensate for disturbance area.

## Community Information Session

Members of the community are invited to attend Community Information Sessions hosted by Coalpac to gain a greater understanding of the proposed Modifications.

The Community Information Sessions will be held in the **Cullen Bullen Progress Hall at the following times;**

- **2pm to 8pm Tuesday 15th April**
- **9am to 8pm Wednesday 16th April**

Coalpac staff will be available throughout the Community Information Sessions to answer any questions.

**We would encourage anybody wishing to learn more about the Modifications or to raise any concerns they may have to come along and talk to our staff.**

Printed by CW Print, Lithgow on behalf of Coalpac Pty Ltd (Administrators Appointed)

**Appendix E** Coalpac Community Newsletter, July 2014

COALPAC

July 2014

# Community Newsletter

Welcome to the seventh edition of the Coalpac Community Newsletter. This edition outlines our response to submissions received for the proposed Modifications to Cullen Valley Mine and Invincible Colliery operations. **We would like to thank you for taking the time to make a submission, your feedback is important to us.** If you have questions, please feel free to call 6359 0600.

## Response to Submissions to Modifications

Coalpac is seeking approval for two Modifications to its current approvals for open cut and highwall mining at Invincible Colliery and Cullen Valley Mine to allow the continuation and extension of operations.

After reviewing submissions received by the NSW Department of Planning and Environment following the Public Exhibition period, Coalpac has prepared a Response To Submissions report which addresses concerns raised in submissions and responds to them as part of the approval process. The main points raised in submissions included:

- **Impacts to Escarpment Landforms (Sandstone cliffs)**
- **Impacts on Threatened and Endangered Species and Ecological Communities**
- **Adequacy of Biodiversity Offsets (Land to be Conserved)**
- **Water Impacts (Surface & groundwater)**
- **Air Quality and Noise Impacts**
- **Rehabilitation Effectiveness**
- **Reservation Status of Ben Bullen State Forest**
- **Economic Justification**
- **Aboriginal Heritage.**

Our Response To Submissions report has been lodged with the NSW Department of Planning and Environment. You can view the document at: **http://majorprojects.planning.nsw.gov.au**

A paper copy is also available for review at reception at Invincible Colliery.

## Submissions – Strong Local Support

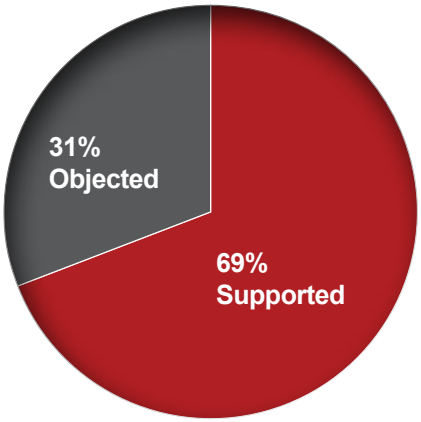
Coalpac's proposal to recommence mining operations at Invincible Colliery and Cullen Valley Mine has received strong support from the local Lithgow, Bathurst and Mid-Western LGAs.

When the submissions were grouped by Local Government Area (LGA) it was clear that there was strong local support for the proposed Modifications. The main objections to the proposed Modifications were from outside of the local LGAs.

The potential for positive impacts to the local economy and employment were named as the primary reasons for local expressions of support, with 147 submissions from a total of 212 in the local area in support of the proposal, see pie chart.

### Individual Submissions

Lithgow, Bathurst and Mid-Western Local Government Areas



# Response To Main Concerns

The mine plans for the Modifications have been designed to ensure that the environmental and community impacts are minimised. Key aspects of the proposed mine plans include:

- **A buffer zone has been left between the proposed open cut mining areas and the escarpment at Invincible Colliery, which is in excess of regulator recommendations**
- **Avoidance of significant impacts to known populations of threatened species and communities by limiting open cut and using highwall mining**
- **Commitment to specific management procedures to minimise potential impacts to the local community and the environment (including blast vibration limits, daylight only mining operation and increased dust suppression measures).**

The proposed biodiversity offset package provides a ratio of more than 4.3:1. This means more than 4.3 hectares will be conserved for every 1 hectare of native vegetation that is disturbed.

The Federal Government has already reviewed the proposed Modifications and determined that they will not have a significant impact upon flora, fauna or water resources.

Independent studies have confirmed that the continued implementation of appropriate management and mitigation measures will ensure that project related dust and noise levels in Cullen Bullen will continue to be below the relevant NSW regulatory criteria.

The local mining and energy generation industry underpins the economic base of the Lithgow region. The proposed Modifications will inject an estimated $149 million annually into the local economy and provide up to 245 much needed jobs for the region.

Coalpac is committed to the continued rehabilitation of cleared areas to ensure native vegetation is restored to a high standard consistent with the surrounding landscape.

Good rehabilitation progress continues to be made on both sites with strong early growth and integration with local flora and fauna species.

Rehabilitation areas are surveyed by independent, qualified ecologists on an annual basis to monitor and report on process and performance.

**Invincible Colliery May 2014:** established rehabilitation after six years

# Next Steps

The NSW Department of Planning and Environment will complete their Planning Assessment Report and the proposed Modifications will be determined by the Planning Assessment Commission.

In the meantime we continue to work through the Administration process with the future of the company and its employees reliant upon approval being gained for the proposed Modifications.

If you have any questions regarding the proposed Modifications please contact Ian Follington, our CEO, on phone (02) 6359 0600 or email ifollington@cetresources.com

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