MT ARTHUR COAL
ANNUAL ENVIRONMENTAL MANAGEMENT REPORT

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Name of Mine	Mt Arthur Coal
Mining Operations Plan commencement date	1 July 2011
Mining Operations Plan completion date	30 June 2013
AEMR commencement date	1 January 2012
AEMR completion date	30 June 2012
Name of leaseholder	Hunter Valley Energy Coal Pty Ltd
Name of reporting officer	Rob Hayes
Title	Environment and Community Manager
Signature	
Date	14 September 2012

1 Introduction

Mt Arthur Coal is an open cut coal mine located approximately five kilometres south west of Muswellbrook in the Upper Hunter Valley. Owned entirely by BHP Billiton, Mt Arthur Coal comprises both mature and new operations that are operated 24-hours, seven days a week (excluding Christmas Day and Boxing Day).

This Annual Environmental Management Report (AEMR) details Mt Arthur Coal's environmental and community performance for the period from 1 January 2012 to 30 June 2012. This reporting period has been amended to a six month timeframe to allow future AEMR's to align with the Australian financial year and other reporting requirements. The amended time frame for the AEMR has been approved by the NSW Department of Trade & Investment (DT&I) and NSW Department of Planning and Infrastructure (DoPI).

This report addresses mining and related operations for the Mt Arthur Coal complex which includes the Mt Arthur Underground Project and Mt Arthur Coal Mine Open Cut Consolidation Project. These operational areas are shown in Figure 1.

This AEMR is a statutory approval requirement and has been prepared in accordance with DT&I EDG03 *Guidelines to the Mining, Rehabilitation and Environmental Management Process* and with the Mt Arthur Coal Mine Open Cut Consolidation Project Approval. Table 1 provides a summary of the AEMR requirements.

This report was prepared in consultation with DT&I, DoPI, Muswellbrook Shire Council (MSC) and NSW Office of Water (NOW), and includes all additional reporting requirements.

The AEMR is distributed to a range of stakeholders that include government authorities, non-government organisations (NGOs), the Community Consultative Committee (CCC), libraries, local residents, other mines and BHP Billiton employees. The report is also available on the BHP Billiton website at www.bhpbilliton.com.

Table 1: AEMR requirements

Reference	Condition	AEMR section
EDG03 Guidelines	The current status of: a) approvals; b) leases; c) licences; d) environmental risk management and control strategies.	Section 1.1
EDG03 Guidelines	For the previous 12 month period (six month period, in the case of this interim report): a) mining, mine development, and rehabilitation in relation to the Mining Operations Plan (MOP); b) environmental performance in relation to the collective conditions of approvals, leases and licences; c) community relations and liaison.	a) Section 2 and 5 b) Section 3 and 1.1 c) Section 4.0

Reference	Condition	AEMR section
EDG03 Guidelines	It also looks to the next 12 months by: a) proposing improvements in environmental performance and management systems; b) specifying environmental and rehabilitation targets to be achieved.	a) Section 3 b) Section 6
Schedule 3 Condition 8	The Proponent shall: a) implement best noise management practice, which includes implementing all reasonable and feasible noise mitigation measures; b) ensure that the real-time noise monitoring and meteorological forecasting data are assessed regularly, and that mining operations are relocated, modified and/or suspended to ensure compliance with the relevant conditions of this approval; c) regularly investigate ways to reduce the operational, low frequency, rail and road traffic noise generated by the project, and report on these investigations in the annual review (see condition 3 of schedule 5), to the satisfaction of the Director-General.	Section 3.9
Schedule 3 Condition 53	The Proponent shall: a) minimise and monitor the waste generated by the project; b) ensure that the waste generated by the project is appropriately stored, handled and disposed of; c) manage on-site sewage treatment and disposal in accordance with the requirements of Council; d) report on waste management and minimisation in the Annual Review, to the satisfaction of the Director-General.	Section 3.15

Reference	Condition	AEMR section
Schedule 5 Condition 3	By the end of 2010, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Director-General. This review must: a) describe the works that were carried out in the past year, and the works that are proposed to be carried out over the next year; b) include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against the • relevant statutory requirements, limits or performance measures/criteria; • monitoring results of previous years; and • relevant predictions in the Environment Assessment (EA); c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; d) identify any trends in the monitoring data over the life of the project; e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; f) describe what measures will be implemented over the next year to improve the environmental performance of the project.	Section 3
Appendix 3 Commitment 11	Water at Mt Arthur Coal will continue to be managed in accordance with best practice and the reduce, reuse, recycle principles. Development of modern tailings storage facilities and possible modifications to coal preparation processes to reduce water usage on site will continue to be developed and assessed, and water use and reduction initiatives will be reported annually in the Annual Review.	Section 2.8
Appendix 3 Commitment 27	Mt Arthur Coal will monitor the proportion of its additional employees needed for the consolidation project that are recruited from outside the local area (defined as Muswellbrook, Upper Hunter and Singleton Local Government Areas) and will report on this in its Annual Review for the project. If the proportion of employees recruited from outside the local area excessively differs from the 20 per cent level forecast in the environmental assessment, that is 30 per cent or above in-migrant new employees in any one calendar year, Mt Arthur Coal will review its recruitment program to encourage greater local recruitment and will publish in its next Annual Review the measures it proposes to adopt to achieve this including the timeframe for their implementation and how their effectiveness would be monitored.	Section 2.11

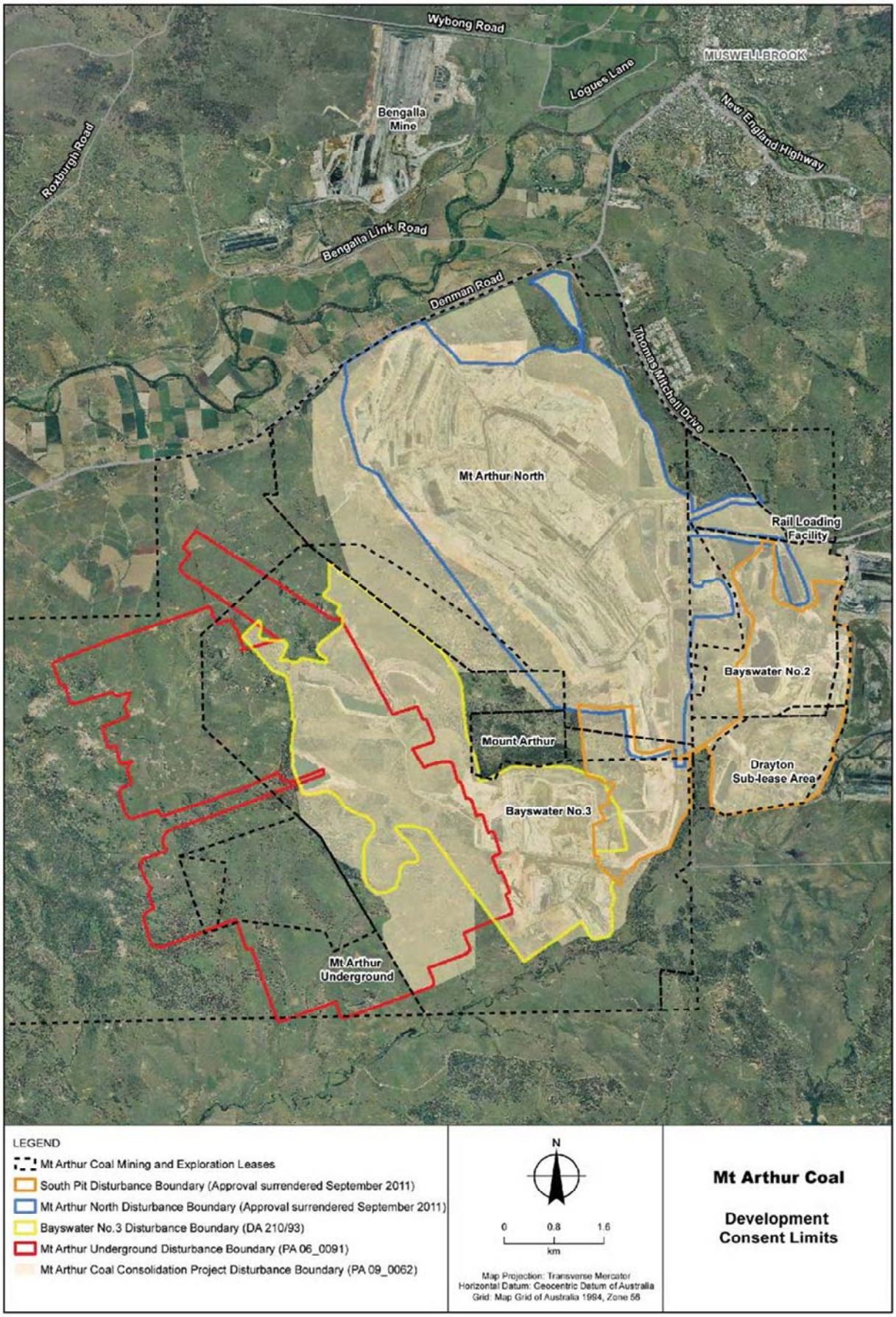


Figure 1: Location of the Mt Arthur Coal disturbance boundary

1.1 Consents, Leases and Licences

Mt Arthur Coal has a large number of statutory approvals that regulate activities on site. Each of these approvals has conditions which are derived from a range of aspects including the nature and size of the operation, the diversity and sensitivities of local land use and the environment, the existing cumulative level of impact from mining and other industries, the close proximity to large residential areas, and the comprehensive regulatory approvals process in NSW. Details on Mt Arthur Coal's existing statutory approvals as at 30 June 2012 are provided in Table 2.

1.1.1 Project Approvals

The granting of the Mt Arthur Coal Mine Open Cut Consolidation Project (09_0062) in 2010 enabled improved compliance management and streamlined internal and external auditing with a focus on practical improvement initiatives. The surrender of DA 210/93 Bayswater No. 3 will be undertaken during the next reporting period, resulting in two approvals for the complex: one for open cut and surface facilities and one for the underground project.

1.1.2 Mining Leases

In 2010, applications for the renewal of mining purpose lease (MPL) 263 and exploration licence (EL) A171 were submitted to DT&I. Draft conditions for MPL 263 were received in October 2011,with the renewal of A171 and MPL 263 still pending. An application for the renewal of EL 5965 was submitted during the reporting period and renewal is expected in late 2012.

Table 2: Mt Arthur Coal's existing statutory approvals as at 30 June 2012

Description	Issue date	Expiry date
Development consents or project approvals issued by the NSW Department of Planning and Infrastructure		
Bayswater No. 3[1]	12/09/94	11/09/15
Mt Arthur Underground	02/12/08	31/12/30
Mt Arthur Coal Consolidation Project	24/09/10	30/06/22
Environment protection licence issued by the Environment Protection Authority		
EPL 11457	09/10/01 (last updated on 8/8/11)	Not specified
Mining leases and exploration licences issued by the Department of Trade and Investment		
A171	18/10/79	*
CCL 744	03/07/89	21/01/28
MPL 263	17/10/90	**
CL 396	03/06/92	03/02/24
A437	04/03/91	04/03/15
ML 1358	21/09/94	20/09/15
EL 5965	15/07/02	*

Description	Issue date	Expiry date
ML 1593	30/04/07	29/04/28
ML 1487	13/06/01	12/06/22
ML 1548	31/05/04	30/05/25
ML 1655	03/03/11	03/03/32

[1] Approval granted by DoPI for the surrender of consent to be postponed until a determination under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC) Act has been made on the Mt Arthur Coal Consolidation Project. The surrender of this consent will be undertaken during the next reporting period.
* Application for renewal submitted to DT&I, renewal is pending.
** Application for renewal submitted to DT&I, draft conditions have been received and renewal is pending.

1.1.3 Environment Protection Licence

During the reporting period, no variations were made to the Mt Arthur Coal Environment Protection Licence (EPL) No.11457 were made during the reporting period.

1.1.4 Environment Protection and Biodiversity Conservation Act Approvals

The *Environment Protection and Biodiversity Conservation* (EPBC) *Act* is federal legislation administered by the Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) that protects nationally significant flora, fauna and ecological communities.

In February 2011, Mt Arthur Coal voluntarily lodged a referral under the EPBC Act for areas approved under state planning legislation. The referral was placed on public display during February and March 2011 and received no comments. SEWPAC determined the project to be a controlled action for assessment through preliminary documentation. Preliminary documentation was prepared by Mt Arthur Coal and lodged with SEWPAC in November 2011. The preliminary documentation was placed on public exhibition in January 2012 before undergoing assessment by SEWPAC.

In April 2012, Mt Arthur Coal was granted approval with conditions from SEWPAC to undertake the controlled action within the designated areas. The action was commenced in May 2012, with approximately 1 hectare of vegetation cleared for the construction of a dual substation facility.

1.2 Mine Contacts

Mt Arthur Coal has an Environment and Community team committed to managing and overseeing implementation of the environmental management system (EMS) and related programs. The team continues to maintain effective professional relationships with key stakeholders, including government agencies, NGOs, the local community, other mines and employees.

During the reporting period, there were a number of important changes to the personnel and roles in the team. The team welcomed Phil Truong as Environmental Coordinator and Sarah Knoll as Advisor Community Relations. Sarah replaced Nicole Wergeltoft-Grant, who has commenced parental leave. Rebecca Smith, Environmental Coordinator, has also commenced parental leave. Scott Mitchell was appointed to the role of Superintendent Health, Safety, Environment and Community with the BHP Billiton's Caroona Coal Project.

A recruitment process has commenced for the Superintendent Environment and Advisor Environment positions.

Contact details for Mt Arthur Coal's General Manager and Environment and Community team can be found in Table 3.

Table 3: Mt Arthur Coal General Manager and Environment and Community team contact details

Name and role	Contact details
Michael White - General Manager	Ph 02 6544 5800 Fax 02 6544 5801
Rob Hayes - Manager Environment and Community	Ph 02 6544 5845
Michael Gale - Superintendent Environment	Ph 02 6544 5874
Donna McLaughlin - Advisor Environment	Ph 02 6544 5992
Shelley Masterson - Superintendent Community Relations	Ph 02 6544 5832
Sarah Knoll - Advisor Community Relations	Ph 02 6544 5305

1.3 Actions required at previous AEMR review

A review of compliance against legal requirements is required on an annual basis during the preparation of the AEMR. During the reporting period, Mt Arthur Coal achieved a high level of compliance against approval conditions and legislation applicable to the site. Mt Arthur Coal maintains regular communication with NSW Government agencies to ensure that improved levels of effective assessment and reporting continue.

DT&I conducted a review of the 2011 AEMR including an inspection of Mt Arthur Coal's operations on 21 May 2012. The purpose of the inspection was to review compliance with environmental requirements of relevant approval instruments. Mt Arthur Coal was commended on the general operations and the progress of rehabilitation works and no further actions were required.

DoPI conducted an Annual Review inspection on 17 July 2012, and inspected Mt Arthur Coal's oil separator system on 27 July 2012. DoPI considered that the 2011 AEMR generally satisfied the majority of the requirements for Annual Reviews in Condition 3, Schedule 5 of Project Approval 09_0062. Key recommendations from the review and inspection are detailed in Table 4.

Table 4: Actions required from DoPI inspection

Actions required	Where dealt with in this AEMR
The report failed to address the following aspects of Condition 3, Schedule 5 of the project approval: a) Include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against the i. The monitoring results of previous years; ii. The relevant predictions in the EA; b) Identify any trends in the monitoring data over the life of the project; c) Identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies.	Section 3 and 4
The Department requests that the blast capture rate (by blast monitor) be included in the next review.	Section 3.8
The Department notes that page 65 of the report contains the list of observations from the 2010 review. It is noted that the Department's comments relative to the oil separator are missing. You are requested to ensure that any comments from the relevant agencies are included in future reviews. Further, as a result of the 2010 review the mine was "requested to engage a suitably qualified consultant to audit the oil separation and drainage system and provide recommendations on its effectiveness and potential improvements. A copy of the report and a timeline for implementation of any recommendations should be provided by 22 July 2011". The Department notes that a copy of the report is yet to be provided.	Audit completed by Worley Parsons (report finalised October 2011) Action plan developed and implementation progressing

1.4 Mt Arthur Coal Environmental Management System

Mt Arthur Coal has implemented a comprehensive Environmental Management System (EMS) that provides a framework to manage compliance with relevant legislation and statutory approvals and conformance to organisational objectives and community expectations. The EMS is certified against ISO14001, which is the benchmark international standard for development, implementation, continual review and improvement of an EMS.

The EMS is based on a 'plan, do, check and act' cycle and encourages continual improvements in performance. It uses a suite of procedures for key activities that have the potential to generate environmental and social impacts. These procedures are continually reviewed, communicated to employees and audited for compliance.

To maintain certification to international standards, Mt Arthur Coal is subject to annual surveillance audits and three-yearly recertification audits. A three- yearly recertification audit was undertaken in March 2012 by Det Norske Veritas, an independent risk management company, to determine the degree of conformity and effectiveness of the system against the certification criteria. The audit identified:

- one minor non-conformance in the areas of emergency preparedness and response;
- three observations in the areas of environmental policy and operational control;
- one opportunity for improvement in the area of competence, training and awareness.

Overall, the audit showed that the EMS was in conformance with ISO14001 and recertification was attained. Mt Arthur Coal developed an action plan during the reporting period to address the minor non-conformity identified during the recertification audit.

1.5 Legal Compliance and Other Requirements Review

Mt Arthur Coal has a system to identify, manage, assess and report legal compliance against requirements, which is managed by the Environment and Community team. This system includes EMS procedures, checklists, inspections and audits. Legal compliance is monitored on a continual basis from analysis of monitoring and other data, maintenance of compliance checklists and a system of regular audits and inspections. As part of this system, areas of non-compliance are promptly identified and actioned.

Inspections may also be conducted on an ad-hoc basis by government authorities to assess, among other matters, performance against legal and other requirements. In particular, scheduled and non-scheduled inspections of Mt Arthur Coal's operations have been undertaken by DoPI's Singleton-based compliance officers throughout the reporting period.

Consistent with EMS procedures, any changes to legal requirements such as new approvals or changes to legislation are monitored by the Environment and Community team. These changes may be identified from research, industry contact and correspondence from NGOs, government notifications, subscriptions, media articles and legal advice. Mt Arthur Coal's EMS framework, procedural and training documentation is also reviewed on an ongoing basis and is updated as required to reflect changes in legal requirements. During the reporting period, changes were made to the EMS documentation to ensure consistency with the changing legislative and approval requirements.

1.5.1 Independent Environmental Audit

An independent environmental audit report was submitted to DoPI in March 2012. DoPI has requested a number of additions to the audit report and a revised report will be submitted during the next reporting period.

1.5.2 Website Audit

The results of an audit of website content for compliance against Condition 11, Schedule 5 of the Mt Arthur Coal Mine Open Cut Consolidation Project Approval is provided in Table 5. Mt Arthur Coal achieved a high level of compliance against approval conditions.

Table 5: Results of the Mt Arthur Coal website audit for the reporting period

Project approval reference	Website requirement	Compliant	Comments
Schedule 5, Condition 11	A copy of all current statutory approvals for the project	Yes	A copy of the Mt Arthur Coal Mine Open Cut Consolidation Project Approval 09_0062, the Mt Arthur Underground Project Approval 06_0091 and the Bayswater No. 3 Development Consent are available

Project approval reference	Website requirement	Compliant	Comments
Schedule 5, Condition 11	A copy of the current environmental management strategy and associated plans and programs	Yes	All management plans and strategies required by the Mt Arthur Coal Mine Open Cut Consolidation Project Approval 09_0062 that are approved by DoPI or submitted for approval are available
Schedule 5, Conditions 8 and 11	A summary of the monitoring results of the project which have been reported in accordance with the various plans and programs approved under the conditions of this approval	Yes	Monitoring results since September 2010 are available through the documents titled 'CCC Meeting - Monitoring Results'
Schedule 5, Condition 11	A complaints register which is to be updated on a monthly basis	Yes	Monthly reports of community complaints since November 2010 are available
Schedule 5, Condition 11	A copy of the minutes of CCC meetings	Yes	Mt Arthur Coal CCC meeting minutes since September 2010 are available
Schedule 5, Condition 11	A copy of any Annual Reviews (over the last five years)	Yes	Annual Environmental Management Reports since 2005 are available
Schedule 5, Condition 11	A copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit	N/A	Not applicable – the independent environmental audit was not finalised at the end of the reporting period
Schedule 5, Condition 11	Any other matter required by the Director-General	N/A	Not applicable – no requests have been made by the Director-General
Schedule 3, Condition 46	The amount of coal transported from the site in each calendar year and the number of coal haulage train movements generated by Mt Arthur Coal mine (on a daily basis)	Yes	The Coal Transport Report for 2011 is available

2 Operations During the Reporting Period

2.1 Exploration

Exploration activities are conducted in accordance with Mt Arthur Coal's EMS, exploration procedure and regulatory approval conditions. During the reporting period, Mt Arthur Coal conducted exploration drilling activities in ML 1358 and EL 5965 to further define coal seam geology, coal quality and geotechnical parameters of the resource. During these activities six boreholes were drilled totalling 2,150 metres in depth. Environmental assessments were conducted for each drill site prior to commencement of drilling to minimise impacts.

Grouting of completed boreholes was signed off by the driller who completed the task and was checked by the supervising geologist prior to the grouting records being archived. Boreholes that are yet to be grouted or that require additional testing have been secured with borehole caps.

2.2 Land Preparation

Clearing of vegetation is undertaken in accordance with the existing clearing and topsoil stripping procedure. Prior to felling, all large trees were inspected for the presence of fauna. Consistent with EMS procedures, tree felling is required to be delayed in some instances to enable the natural movement of fauna from these areas. Felling is also conducted outside of breeding seasons where possible.

Trees are felled in a controlled manner to minimise the likelihood of injury or death to fauna that could possibly be present, but were not detected during external inspections and observations. Any fauna found may be checked or relocated as required by a member of the Environment and Community team or local wildlife carers.

During the reporting period 58,194 bank cubic meters of topsoil was stripped from new areas in advance of the Ayredale South and Roxburgh highwalls. Topsoil was recovered using excavators, dozers and trucks or scrapers, and either placed directly onto reshaped areas or stockpiled. Soil quality and quantities vary across site, but are generally poor and lacking in structure, nutrients and organic material, with between zero to 300 millimetres of topsoil recovered during stripping. Once established, topsoil stockpiles are revegetated and recorded in the mine planning database.

During the reporting period there were no material variations from the mining operations plan.

2.3 Construction

In line with the growth of Mt Arthur Coal's operations, construction of both mining and infrastructure to support the open cut development continued during the reporting period. Work continued on increasing the industrial area dam capacity to cater for increased catchment from the surrounding area. This work is expected to be completed during the next reporting period.

A new maintenance workshop was commissioned in June 2012 to accommodate the ultra class truck fleet. Minor infrastructure including water reticulation pipelines and temporary relocatable offices were also constructed or relocated during the reporting period.

There were no variations from the mining operations plan during the reporting period.

2.4 Mining

Mining occurs in distinct stages that are described below and illustrated in Figure 2. Holes are drilled into overburden and safely loaded with explosives. The overburden is then blasted to fracture the rock and enable more efficient removal of this material. Many controls are applied during blast design, drilling and firing to reduce the potential for impacts on the environment, buildings, powerlines and the community.

Hydraulic excavators and electric rope shovels remove and load blasted overburden into large haul trucks of nominal 350-tonne and 206-tonne capacities. These trucks transport the material to emplacement areas generally within the mine void.

After removing the overburden above the coal seams, the coal is mined using hydraulic excavators and loaders with the assistance of dozers. Haul trucks of nominal 165-tonne capacity then transport the coal to Mt Arthur Coal's coal handling and processing plant (CHPP).

During the reporting period, coal was mined from the Glen Munro, Woodlands Hill, Warkworth, Mt Arthur, Piercefield, Vaux, Broonie, Bayswater, Wynn, Bengalla, Edderton, Clanricard, Edinglassie, Transition and Ramrod Creek seams within the Wittingham coal measures. Approximately 11.1 million tonnes of run-of-mine coal was mined from the combined open cut operations. Table 6 provides a summary of Mt Arthur Coal's mine performance figures for the reporting period.

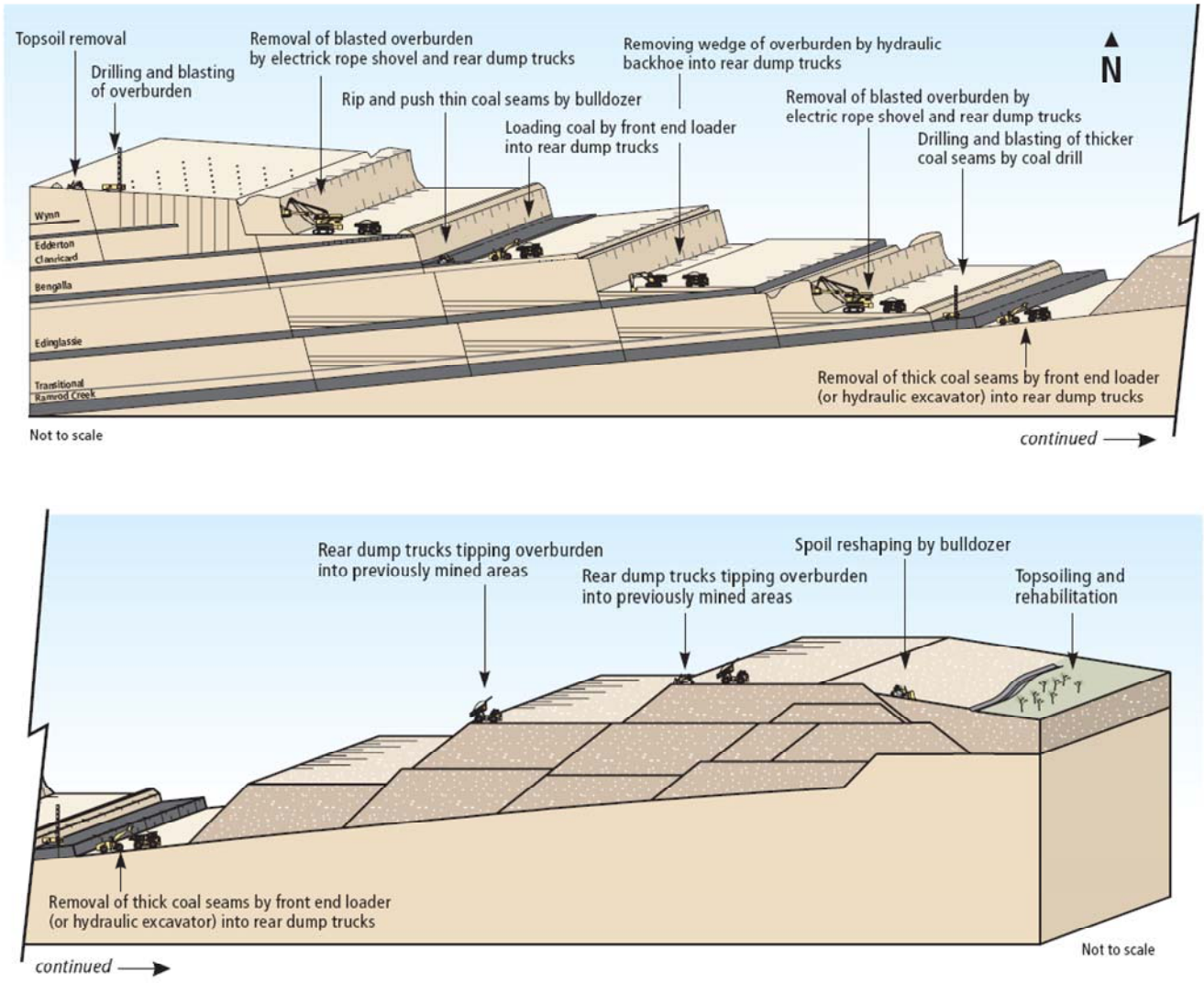


Figure 2: Mining sequence from topsoil removal to rehabilitation

Table 6: Mine performance figures for the reporting period

Category	Unit	This reporting period (Jan – Jun 2012)	Estimated for next reporting period (Jul 2012 – Jun 2013)
Topsoil stripped	bcm	58,194	125,384
Topsoil used/spread	bcm	33,717	343,945
Overburden	bcm	46,586,503	110,372,326
Run-of-mine coal mined	tonnes	11,086,173	24,048,121
Product coal	tonnes	8,602,513	18,824,222
Washery reject	tonnes	2,407,285	5,110,157

2.5 Mineral Processing

After crushing to size and processing to remove impurities, coal is stockpiled prior to transport from site. During the reporting period 8.6 million tonnes of total saleable product was transported from Mt Arthur Coal. This includes 7.9 million tonnes of export product coal transported by rail to the Port of Newcastle and 703,958 tonnes by conveyor to the Bayswater Power Station. Consistent with Mt Arthur Coal's project approvals, no product coal was transported from site by public road and all train movements were recorded.

During the reporting period there were no material variations from the mining operations plan.

2.6 Overburden Management

As previously mentioned, overburden is transported to emplacement areas generally within the mine void, performing a secondary function of reforming all previously mined areas. Suitable overburden material with generally inert qualities and low propensity to spontaneous combusting and acid water generation is used in the emplacement and shaping for final rehabilitation.

During the reporting period 46.6 million tonnes of overburden was stripped and there were no variations from the mining operations plan.

2.7 Coal Stockpiles

Run-of-mine coal extracted by the approved open cut operations is delivered by truck to either the hopper bins which feed into the CHPP or to the raw coal stockpiles. At the end of the reporting period the run-of-mine stockpile inventory was 226,923 tonnes.

During the reporting period there were no material variations from the mining operations plan.

2.8 Water Management

Mt Arthur Coal's water management system includes monitoring surface and ground water sites according to an approved schedule. Surface water monitoring sites include creeks, mostly ephemeral,

and dams that surround the mining area, while groundwaters are representative of the aquifers found below the natural surface.

Mt Arthur Coal uses a quantitative water model to predict the mine water balance in advance of the mining operation and provide a snapshot of available water at a given point in time based on a number of variables. Model predictions are then used to assist in operational planning and determination of future water quantity requirements.

During the reporting period Mt Arthur Coal used 4,775 megalitres (ML) of water for coal handling and processing, dust suppression, potable consumption and use in the industrial area. The primary sources of water include rainfall runoff captured in both in-pit and out-of-pit storages, supplemented with recycled water from MSC as part of the treated effluent reuse scheme. Table 7 provides a surface water inventory for the reporting period.

During January to June 2012, Mt Arthur Coal discharged 87.54 ML of water into the Hunter River from its licensed discharge point under the Hunter River Salinity Trading Scheme. Water was discharged during March 2012 over four consecutive days when the river was in high flow.

During 2012, Mt Arthur Coal implemented a number of initiatives relating to site water management including:

- continuing to investigate water saving opportunities;
- reviewing and updating the site water management plan;
- reviewing available water storage options and supply rates for use at site.

During the reporting period there were no variations in water management from the mining operations plan.

Table 7: Surface water inventory at Mt Arthur Coal

Mine water storage	Volume held at the start of the reporting period (ML)	Volume held at the end of the reporting period (ML)	Full storage capacity (ML)
Environmental dam	622	503	1,296
Main dam	940	648	1,075
CHPP dirty water dam	148	167	500
Drayton void	2,130*	1,996	2,276
Belmont void	1,268	1,336	2,281
McDonalds void	3,110	3,165	4,040

* 1,000ML of existing water stored to be kept in reserve for Drayton Coal Mine.

2.9 Hazardous Material Management

Mt Arthur Coal has an existing hazardous materials management procedure to ensure all risks associated with the use of hazardous materials are managed in accordance with occupational, health and safety procedures, relevant standards and legislation.

All hazardous substances and dangerous goods stored and used at Mt Arthur Coal are maintained in a register (ChemAlert) with their associated material safety data sheets. To maintain the integrity of the

hazardous materials management system, all work areas are inspected by supervisors on an ongoing basis as part of their general area inspections and safety observations. Handling, transportation and disposal of hazardous materials are undertaken in accordance with relevant standards and approvals.

During the reporting period there were no variations from the mining operations plan.

2.10 Other Infrastructure Management

A Section 100 Application under the *Coal Mines Health & Safety Act 2002* for the extension of the existing tailings storage facility was prepared and submitted to DT&I during December 2011 following the completion of a final detailed design. Mt Arthur Coal received approval in February 2012, with the initial stages of work commenced in late June 2012, which will continue into the next reporting period.

During the reporting period there were no variations from the mining operations plan.

2.11 Employment Details

At the end of June 2012, Mt Arthur Coal employed 1,522 full-time permanent employees and approximately 620 contractors on a full-time equivalent basis. This was a 19 per cent increase in the number of permanent employees and an 18 per cent reduction in the number of contractors when compared to 2011 (see Figure 3).

Local residency is one of the factors considered when recruiting new employees and contractors. This approach ensures that local communities benefit from Mt Arthur Coal's operations. During the reporting period approximately 72 per cent of Mt Arthur Coal's employees (for which information on applicant location was available) were recruited from the local government areas of Muswellbrook, Singleton and the Upper Hunter.

Employee numbers are consistent with predictions in the Mt Arthur Coal Mine Open Cut Consolidation Project Environmental Assessment and align with commitments made in the project approval. They also remain relatively consistent with historical employment patterns and demonstrate Mt Arthur Coal's commitment to employing local people where possible during growth projects.

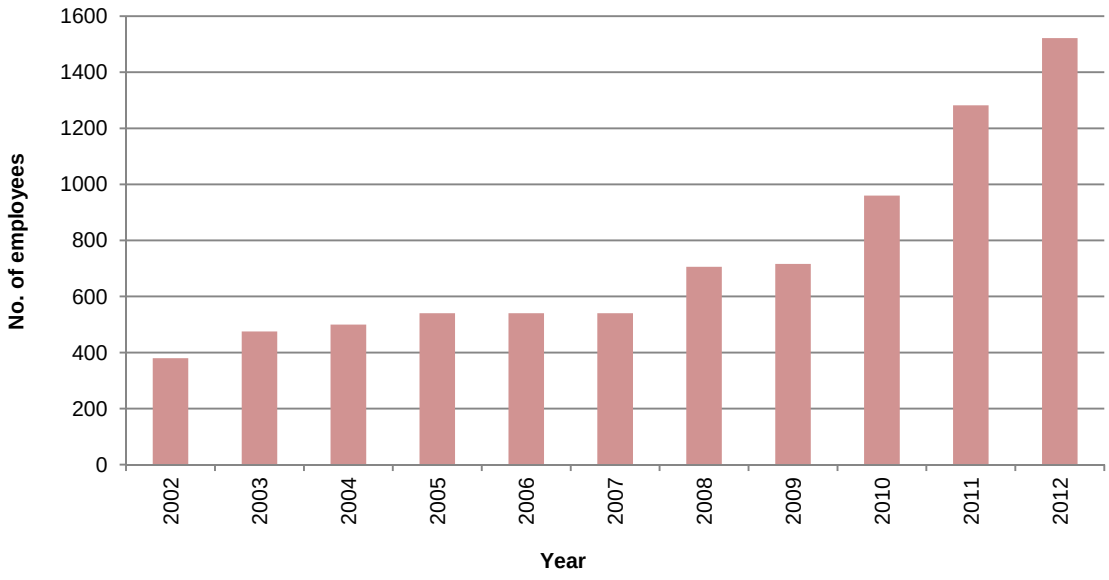


Figure 3: Mt Arthur Coal employee numbers from 2002 to 2012

3 Environmental Management and Performance

Mt Arthur Coal is committed to delivering the highest standards of environmental performance to meet or exceed legal and other requirements. This commitment extends to using leading practice initiatives to minimise the impact of our operations on the environment and community.

The implementation and effectiveness of the control strategies for risks identified in the mining operations plan, previous AEMR's and management plans are shown in the following section, with a focus on the following areas:

- Environmental management:
  - whether the proposed control strategy was adequate to manage risks associated with operations during the reporting period;
  - variations from proposed control strategies implemented during the reporting period and the reasons for them;
  - description of the works carried out during the reporting period and proposed to be carried out over the next reporting period;

- Environmental performance:
  - review of the monitoring results and complaints records during the reporting period, which includes a comparison of these results against the:
    - the relevant statutory requirements, limits or performance measures/criteria;
    - the monitoring results of previous years; and
    - the relevant predictions in the Environment Assessment;
  - a review of performance outcomes;
  - identification of any long-term trends in the monitoring data;
  - identification of any discrepancies between the predicted and actual impacts of the operation, and analysis of the potential cause of any significant discrepancies;

- Reportable incidents:
  - a summary of incident reporting as required by conditions of lease, licence or risk management and monitoring strategies;
  - a review of all incidents which led to non-compliance with conditions of a mining lease, development consent or other licence over the reporting period, and description of what actions were or are being taken to ensure compliance;
  - reference to incident report documents previously provided to DoPI or another agency;

- Improvements:
  - description of initiatives proposed for the next reporting period to improve or further assure acceptable performance.

3.1 Air Quality

3.1.1 Environmental Management

Air quality at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-040 Air Quality and Greenhouse Gas Management Plan;
- MAC-ENC-PRO-057 Air Quality Monitoring Program.

In addition, air quality is managed by an extensive monitoring network and a series of alarming systems based on real-time monitoring data. The statutory[1] dust monitoring network consists of depositional dust gauges, fine particle monitors that operate on a set schedule and real-time fine particulate monitors that operate continuously. The coupling of operational procedures and monitoring allows Mt Arthur Coal to take a proactive approach to dust management.

Dust deposition gauges record dust fallout which can be derived from mining or non-mining activities, and provide a useful measure of changing air quality. Compliance with air quality criteria is demonstrated through depositional dust monitoring by investigating the spatial representation of wind and operational activities for the monitoring period. Depositional dust monitoring is carried out in accordance with Australian Standard 3580.10.1:2003 and analysed for insoluble solids and ash residue. Depositional dust samples are collected on a monthly (+/- 2 days) basis from six statutory depositional dust gauges surrounding Mt Arthur Coal.

Fine dust particles (i.e. less than 10 microns in size and referred to as PM_{10}) are monitored using high volume air samplers (HVAS) fitted with a size selective inlet. These monitors operate for 24-hours every six days in accordance with Australian Standard 3580.9.6:2003. A total of six statutory HVAS units are installed to measure PM_{10} concentrations around the mine.

In addition to the HVAS monitors, five statutory real-time dust monitors, referred to as tapered element oscillating microbalance samplers (TEOMs) are used to record PM_{10} levels on a continuous basis. As required by the approved monitoring program, an additional real-time PM_{10} TEOM monitoring station will be installed to the east of operation within the next reporting period.

The locations of all air quality monitoring equipment at Mt Arthur Coal are shown in Figure 4.

During the reporting period many controls were applied to reduce the potential for the generation and movement of dust from site. These controls will continue to be applied during the next reporting period and include:

- deploying up to seven water carts across site;
- utilising dedicated water carts for contractor operations;
- using dust suppressants on haul roads;
- continually rehabilitating mining areas;
- maintaining a short message service (SMS) alarming system for strong winds;
- changing dumping strategies to low areas during strong winds;
- avoiding tipping into strong headwinds where possible;
- restricting blasting to suitable weather conditions;
- maintaining auto-start for stockpile sprays in windy conditions;
- maintaining enclosed coal loading and transfer areas and associated sprays;
- aerial seeding exposed overburden where practicable.

In January 2012, Mt Arthur Coal aerial seeded approximately 96 hectares of exposed overburden not yet ready for final rehabilitation with a pasture mix developed with assistance from a local agronomist. Similar to previous years, the results continued to be encouraging with germination across the area without the need for cultivation or irrigation and in the absence of topsoil.

[1] Statutory monitoring: The air quality monitoring network includes both statutory and internal use monitoring sites. The monitoring sites designated for internal use provide indicative measures of meteorological and air quality conditions to enhance air quality management at Mt Arthur Coal, but do not necessarily meet standards required for statutory reporting.

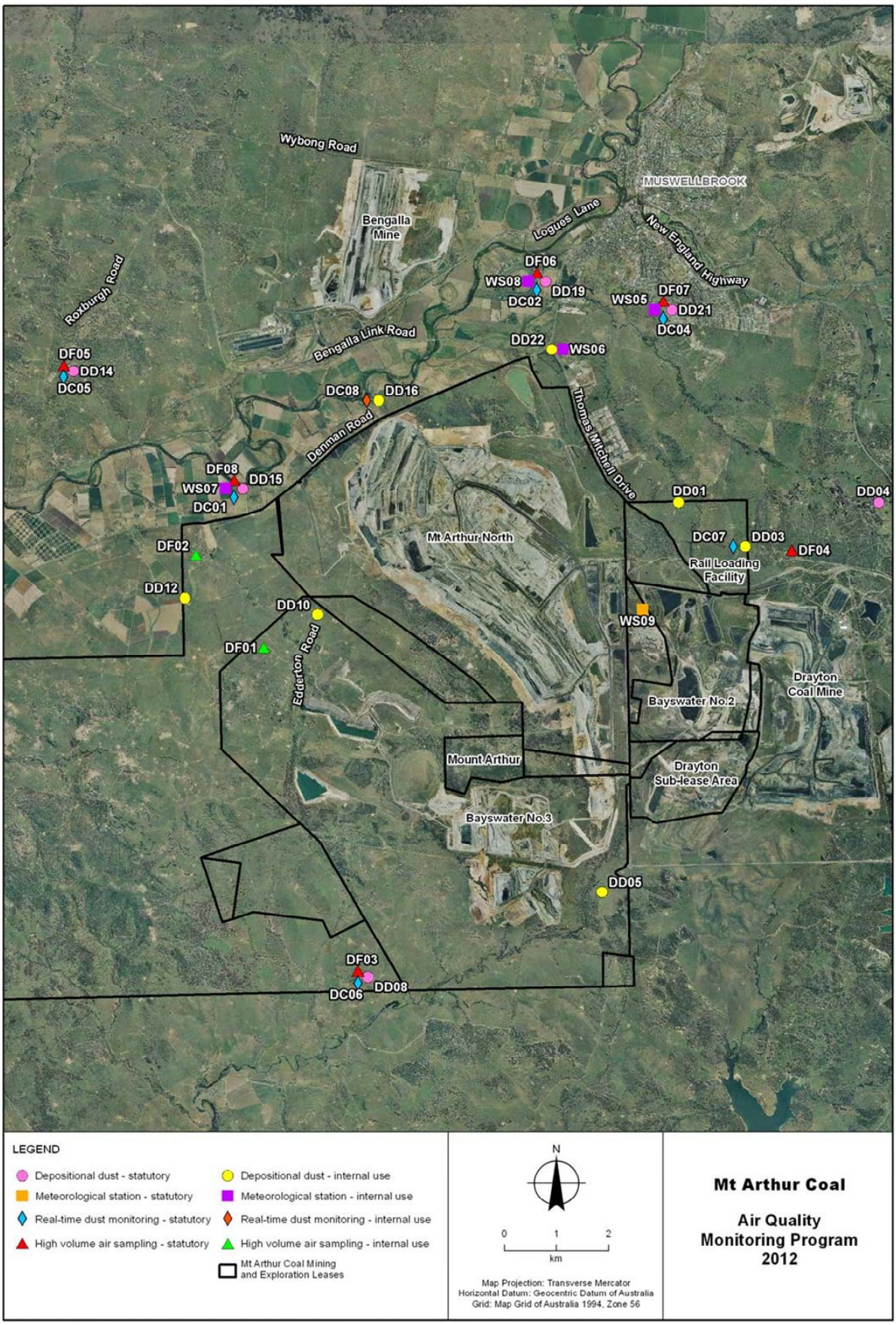


Figure 4: Mt Arthur Coal's air quality monitoring locations

Mt Arthur Coal continued the use of dust suppressants on haul roads during the reporting period following the success of the program in 2011. This involved the use of a non-hazardous liquid polymer (water extender), which is added to the water cart using an automated dosing system. It is then sprayed onto haul roads to improve water penetration, bind fine dust particles and consolidate haul road surfaces.

During the reporting period Mt Arthur Coal continued to be a signatory to the Upper Hunter Air Quality Monitoring Network, which was established in 2012 by the NSW Government in partnership with the coal and power industries. The network now continuously measures dust particles in the air at up to 14 sites throughout the region. Mt Arthur Coal also participated in the Upper Hunter Mining Dialogue environment workshops. The initiative was established by the NSW Minerals Council to provide a forum for collaboration between community, government, consultants and mining companies to focus on air quality across the region.

3.1.2 Environmental Performance

Depositional Dust Gauges

A summary of the results from the statutory depositional dust monitoring sites, together with pictorial representation of the trends in terms of annual average insoluble solids and average annual criteria, are provided in Appendix 1.

The criterion for the maximum total deposited dust level is 4 grams per square metre per month ($g/m^2/mth$) over an annual averaging period. The criterion for the maximum increase in deposited dust levels due to Mt Arthur Coal's operations over an annual averaging period at any one dust gauge is 2 $g/m^2/mth$. From January to June 2012, all depositional dust gauges were at or below assessment criterion. The annual average depositional dust results for the reporting period are consistent with the results from 2009, 2010 and 2011.

As part of the Mt Arthur Coal Mine Open Cut Consolidation Project Environmental Assessment (2009) an air quality assessment was completed in 2009 for open cut operations at Mt Arthur Coal. Air dispersion modelling was completed for representative periods, including the 2011 calendar year, using meteorological data from April 2007 to March 2008 and based on an operating capacity of 16.7 million tons of run-of-mine coal per annum. The environmental assessment predicted for 2011 that no exceedances of the maximum total deposited dust level or maximum increase in deposited dust levels would occur. Monitoring results for the reporting period support the predicted results in the environmental assessment.

Figure 5 uses dust isopleths from Mt Arthur Coal's monitoring sites to illustrate the depositional dust profile surrounding the mine based on the averages of the reporting period. It is important to note that this figure only uses Mt Arthur Coal data and not data from other dust monitoring sources. The EPA criteria for dust deposition (4 $g/m^2/mth$) relates to an annual average.

Contamination by bird droppings, insects and vegetation is a common issue for depositional dust monitoring systems. However during this reporting period there were no contaminated results at the statutory dust deposition sites. A depositional dust gauge is deemed contaminated by an independent monitoring contractor or a National Association of Testing Authority (NATA) accredited laboratory. Results which are found to be contaminated are excluded from the annual average calculation.

Depositional dust gauge data capture rates for the reporting period were 100 per cent at all statutory sites.

High Volume Air Samplers

A summary of the results from Mt Arthur Coal's statutory HVAS PM_{10} monitoring stations for the reporting period is provided in Table 8. The annual average PM_{10} results for the reporting period are consistent with the results from 2009, 2010 and 2011.

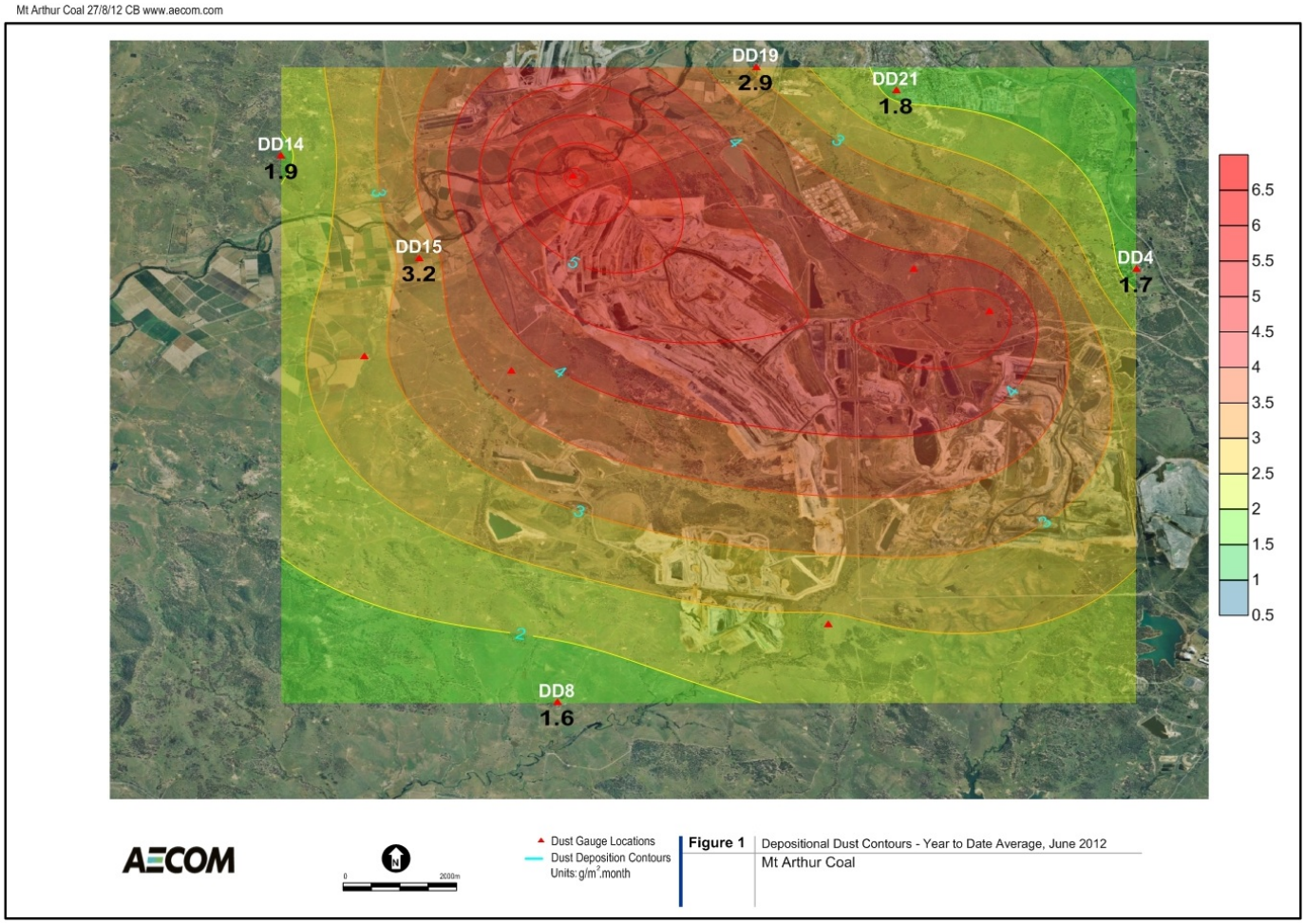


Figure 5: Annual depositional dust concentration

Table 8: Summary of Mt Arthur Coal HVAS PM10 results

Site name	Site reference	Minimum 24-hour result	Maximum 24-hour result	Reporting period average [1]	Annual average [2]
Edderton Homestead	DF03	2.0	33.0	11.4	12.4
Pistol Club	DF04	2.0	37.0	16.9	17.5
Roxburgh Road	DF05	2.0	42.0	14.7	16.0
Sheppard Avenue	DF06	6.0	47.0	19.8	20.0
South Muswellbrook	DF07	7.0	35.0	16.4	17.5
Denman Road West	DF08	3.0	45.0	17.2	18.7

[1] Reporting period average January 2012 to June 2012.
[2] Annual averages for July 2011 to June 2012.

During the reporting period Mt Arthur Coal remained below the short term 24-hour impact assessment criteria of 50 micrograms per cubic metre (µg/m^3) and also below the long-term annual impact

assessment criteria of 30 µg/m^3. High volume air sampler data capture rates for the reporting period were 100 per cent at all statutory sites.

As part of the Mt Arthur Coal Mine Open Cut Consolidation Project Environmental Assessment an air quality assessment was completed in 2009 for open cut operations at Mt Arthur Coal. Air dispersion modelling was completed for representative periods, including the 2011 calendar year.

The annual average HVAS PM_{10} results from air dispersion modelling for 2011 have been compared with actual monitored data for 2011, financial year 2010/2011 (FY11) and financial year 2011/2012 (FY12). Table 9 provides a summary of this data. The monitored data is below the predicted cumulative annual average PM_{10} concentrations at all sites. The 2011 predicted annual average PM_{10} contours compared with the annual average concentration measured at the HVAS is shown in Appendix 2. On average, monitoring results at all sites in FY12 were 27 percent lower than the predicted cumulative results from the 2011 modelling.

Table 9: Predicted annual average HVAS PM_{10} data compared with actual monitored results

Site name	Site reference	Predicted cumulative[1] (µg/m^3)	2011 Monitoring data (µg/m^3)	FY11 Monitoring data[2] (µg/m^3)	FY12 Monitoring data[3] (µg/m^3)
Edderton Homestead	DF03	19	14	13	12
Pistol Club	DF04	22	21	19	17
Roxburgh Road	DF05	20	18	15	16
Sheppard Avenue	DF06	29	21	19	20
South Muswellbrook	DF07	24	21	19	17
Denman Road West	DF08	25	22	21	19

[1] Air dispersion model results for 2011 from 2009 environmental assessment.
[2] Monitoring period from July 2010 to June 2011.
[3] Monitoring period from July 2011 to June 2012.

Tapered Element Oscillating Microbalance Samplers

A summary of the results from Mt Arthur Coal's statutory real-time PM10 TEOM monitoring stations for the reporting period is provided in Table 10. The annual average PM10 results for the reporting period are consistent with the results from 2009, 2010 and 2011[2.]

Data capture rates for individual TEOMs are provided in Table 10. During the reporting period the data capture rate fell below 100 per cent at some sites due to equipment failure from loss of power supply. The power supply issues have since been rectified.

During the reporting period Mt Arthur Coal remained below the long-term annual impact assessment criteria of 30 µg/m^3. The short term 24-hour impact assessment criteria of 50 µg/m^3 was exceeded three times at DC02 during the reporting period, including air emissions from all sources at the one monitoring station. Further investigations into these incidents using wind directional data found Mt Arthur Coal's contribution was less than the 50 µg/m^3 criteria. The calculations and investigations for each elevated result can be found in Table 11.

[2] DC05 commissioned in 2010 and DC06 commissioned in 2011.

Table 10: Summary of Mt Arthur Coal TEOM PM_{10} results

Site name	Site reference	Minimum 24 hour result	Maximum 24 hour result	Reporting period average[1]	Capture rate (%)
Denman Road West	DC01	0.7	37.3	13.3	100.0
Sheppard Avenue	DC02	0.7	78.3 [2]	15.7	96.7
South Muswellbrook	DC04	0.2	33.2	13.7	99.4
Roxburgh Road	DC05	0.5	41.1	15.8	100.0
Edderton Homestead	DC06	2.3	32.3	14.9	94.0

[1] Reporting period average January 2012 to June 2012.
[2] See Table 11 for further information regarding exceedances.

Table 11: Summary of TEOM PM_{10} exceedance investigations

Date	Site reference	Site name	Recorded result	Mt Arthur Coal's contribution	Explanation
4/01/2012	DC02	Sheppard Avenue	52.5	1.0	This monitor is located to the north of the operation. Wind direction was predominantly from the north north-west on this day. During approximately 2 per cent of the day this monitor was located downwind of Mt Arthur Coal's operation.
18/02/2012	DC02	Sheppard Avenue	78.3	18.7	This monitor is located to the north of the operation. Wind direction was highly variable on this day. During approximately 18 per cent of the day this monitor was located downwind of Mt Arthur Coal's operation. A race meet was also being held at Muswellbrook Racecourse, where DC02 is located. When compared to other real time monitors, this result is inconsistent and can be attributed to a localised source.
16/03/2012	DC02	Sheppard Avenue	50.7	0.22	This monitor is located to the north of the operation. Wind direction was predominantly from the north on this day. During approximately 1 per cent of the day this monitor was located downwind of Mt Arthur Coal's operation. A race meet was also being held at Muswellbrook Racecourse, where DC02 is located. When compared to other real-time monitors, this result is inconsistent and can be attributed to a localised source.

As part of the Mt Arthur Consolidation Project Environmental Assessment an air quality assessment was completed in 2009 for open cut operations at Mt Arthur Coal. Air dispersion modelling was completed for representative periods, including the calendar 2011 year.

The annual average TEOM PM_{10} results from air dispersion modelling for 2011 have been compared with actual monitored data for 2011, FY11 and FY12. Table 12 provides a summary of this data. The monitored data is below the predicted cumulative annual average PM_{10} concentrations at all sites. The 2011 predicted annual average PM_{10} contours compared with the annual average concentration measured at the TEOM is shown in Appendix 2. On average results from all sites in FY12 were 42 percent lower than the predicted cumulative results.

Table 12: Summary of modelling compared to monitoring at the TEOMs

Site name	Site reference	Predicted cumulative[1] ($\mu g/m^3$)	2011 Monitoring data ($\mu g/m^3$)	FY11 Monitoring data[2] ($\mu g/m^3$)	FY12 Monitoring data[3] ($\mu g/m^3$)
Denman Road West	DC01	25	15	14	13
Sheppard Avenue	DC02	29	14	17	16
South Muswellbrook	DC04	24	15	14	13
Constable	DC05	20	16	3	10
Edderton	DC06	19	16	18	15[4]

[1] Air dispersion model results for 2011 from 2009 environmental assessment.
[2] Monitoring period from July 2010 to June 2011.
[3] Monitoring period from July 2011 to June 2012.
[4] Monitoring available from December 2011 to June 2012

Total Suspended Particulate

TEOM PM_{10} monitoring data is used to calculate annual average total suspended particulate (TSP) levels. PM_{10} can account for between 24 and 52 per cent of TSP depending on the source of the particulate, as detailed within the *National Pollutant Inventory Emission Estimation Techniques Manual for Mining*, Version 2.3 (Commonwealth of Australia, 2001).

Based on the relative contribution of dust sources at a surface mine the PM_{10} contribution to TSP is conservatively estimated to be 35 per cent at Mt Arthur Coal. Therefore, TSP results can be inferred by multiplying the annual average PM_{10} results by 2.4. During the reporting period Mt Arthur Coal remained below the TSP long-term annual impact assessment criteria of 90 $\mu g/m^3$ at all statutory sites, with the highest annual average TSP result at DF06 of 48 $\mu g/m^3$. These results are consistent with the previous year's results and the predictions in the environment assessment of TSP levels at private residences.

3.1.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to air quality during the reporting period. There were also no reportable incidents related to air quality during the reporting period.

3.1.4 Further Improvements

The aerial seeding and dust suppressant programs at Mt Arthur Coal will continue throughout the next reporting period. Mt Arthur Coal will also continue to be a signatory to the Upper Hunter Air Quality Monitoring Network and participate in the Upper Hunter Mining Dialogue environment workshops.

In February 2012, Mt Arthur Coal submitted details on proposed dust management controls as required under a Pollution Reduction Program (PRP) as part of the EPL No.11457. The scope of the PRP included:

- assessment of current dust emissions and control measures;
- identification of best practice measures to minimise particle emissions;
- evaluation of the practicability of implementing best practice measures;
- establishing timeframes for implementing all practicable best practice measures.

The study identified that Mt Arthur Coal had already implemented a significant number of best practice dust control measures in the day-to-day operations of the site to reduce particulate emissions from coal mining activities. Several additional best practice measures were identified for further detailed evaluation to determine the practicability of implementing these improvements on a large-scale operation. The detailed evaluations which will include financial analysis, assessment of technical feasibility and validation of emission reduction, will be progressed during the next reporting period.

Air quality results recorded during the monitoring period confirm that existing mitigation measures and controls are proving effective in managing dust generation from Mt Arthur Coal's activities.

The Pollution Reduction Program Report is available at www.bhpbilliton.com.

3.2 Erosion and Sediment

3.2.1 Environmental Management

Erosion and sediment at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-PRO-060 Erosion and Sediment Plan;
- MAC-ENC-PRO-063 Surface and Ground Water Response Plan.

The management system includes a comprehensive set of both proactive and reactive control measures designed to minimise the impact of sediment on water sources. The primary management measure for erosion and sediment is the control of initial ground disturbance and timely land rehabilitation following disturbance. Where disturbance is unavoidable, erosion and sediment control structures will be established.

3.2.2 Environmental Performance

The erosion and sediment control impact assessment criteria applicable to Mt Arthur Coal are based on the 90th percentile of baseline total suspended solids (TSS) results for samples collected as part of the surface water monitoring program.

TSS results remained relatively low (>30 mg/L) during the reporting period, with the exception of February 2012 when all sites recorded higher than normal results. Further investigation revealed the elevated TSS results were recorded following a rainfall event, reflecting the initial spike in TSS levels commonly seen after a change from dry to wet conditions. The TSS results from all sites were generally consistent with the results from 2009, 2010 and 2011.

During the reporting period, non-routine samples are also taken at other particular sediment control or clean water dams to understand quality parameters. Water management features were also routinely inspected after significant storm events and maintained to ensure they are performing to design and preventing impacts on downstream waters.

During the reporting period, monitoring of riparian vegetation was undertaken on a quarterly basis at SW02, SW03, SW04, SW12, SW13 and SW15. The channel stability was monitored using photographic logging of erosional and depositional features. Photographs taken during the reporting period showed no evidence of erosion.

3.2.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to erosion and sediment during the reporting period. There were also no reportable incidents related to erosion and sediment during the period.

3.2.4 Further Improvements

Consistent with commitments made in the Mt Arthur Consolidation Project Environmental Assessment, water from all disturbed areas will continue to be collected in drainage structures and sediment dams and either recycled in the mine water management system or allowed to leave site following settlement of sediment. Sediment dams capturing runoff from areas of pre-strip and rehabilitation will be designed in accordance with the provisions for sediment retention basins in *Managing Urban Stormwater Guidelines* (Landcom, 2004).

Mt Arthur Coal will continue to identify strategies to control soil erosion and sediment generation close to the source to minimise the potential for mine activities to adversely affect downstream water quality.

3.3 Surface Water

3.3.1 Environmental Management

Surface water at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-034 Site Water Management Plan;
- MAC-ENC-PRO-061 Surface Water Monitoring Program;
- MAC-ENC-PRO-059 Site Water Balance;
- MAC-ENC-PRO-063 Surface and Ground Water Response Plan.

Water quality upstream and downstream of Mt Arthur Coal activities is monitored by an independent consultant as required at nine statutory reporting sites. Analysis of all water samples collected is undertaken by a NATA accredited laboratory. Additional non-routine water samples were taken during the reporting period, including from the oil and water separator, wash plant, wash bay and clean water areas to ensure acceptable water quality following rainfall events. The location of the surface water monitoring sites is shown in Figure 6.

Mt Arthur Coal's site water management plan aims to minimise any adverse impacts on receiving waters, including Whites Creek, Fairford Creek and the Hunter River and its local tributaries, together with outlining management measures for managing water on site. Mt Arthur Coal's approved monitoring program has established impact assessment trigger values. Impact assessment criteria can be described as triggers which, if activated, would lead to a response in terms of more intensive monitoring, investigation and if required, remedial action.

In addition to water quality monitoring, Mt Arthur Coal also regularly monitors the water balance for the operation to assist forecast and model for different climatic and site scenarios. A series of flow meters and surveyed volumes are utilised to monitor the use and transfer of water between key water storages. All flow meters were calibrated during the reporting period and water storages were surveyed on a weekly and monthly basis to ensure the accuracy of water volume data.

During the reporting period Mt Arthur Coal commenced an upgrade of the integrated reticulation network to enable efficient management of water resources across the site. This upgrade is expected to be completed during the next reporting period. Mt Arthur Coal also commenced updating the site water model to factor in proposed future changes to the site water management system and update input data.

3.3.2 Environmental Performance

Surface water electric conductivity (EC) ranged between 538 microsiemens per centimetre (µS/cm) and 9,950 µS/cm, which is generally consistent with the results from 2009, 2010 and 2011 and below the impact assessment trigger limits for each monitoring location. Potential hydrogen (pH) measured at individual sites remained relatively constant, ranging between 7.23 and 8.69, which is generally consistent with the results from 2009, 2010 and 2011 and below the impact assessment trigger limit of 6.5-9.0.

Water qualities in natural watercourses surrounding the mine including Saddlers Creek (SW01, SW02 and SW03), Quarry Creek (SW04), Ramrod Creek (SW12), Fairford Creek (SW13) and Whites Creek (SW15) were subject to normal variations in response to the ephemeral nature of the creeks, local geology and weather conditions. Additional non-routine surface water sampling was undertaken along these creeks, typically following heavy rainfall events, to ensure localised runoff and stream quality were acceptable. Appendix 3 shows EC, pH and TSS results for the reporting period.

An overview of Mt Arthur Coal's water balance for the reporting period is provided in Table 13 and an overview of the site's water management system can be found in Appendix 4. Similar to results in 2009, 2010 and 2011, the CHPP was the main consumer of water at Mt Arthur Coal during the reporting period. Water sourced from the Hunter River decreased in comparison to previous years, predominantly due to increased rainfall and localised catchment runoff. In line with predictions in the Mt Arthur Consolidation Project Environmental Assessment, the majority of site supply is sourced from catchment runoff. Based on water inputs and losses for the reporting period the water balance was -1,047 ML.

3.3.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to surface water during the reporting period. There were also no reportable incidents related to surface water during the period.

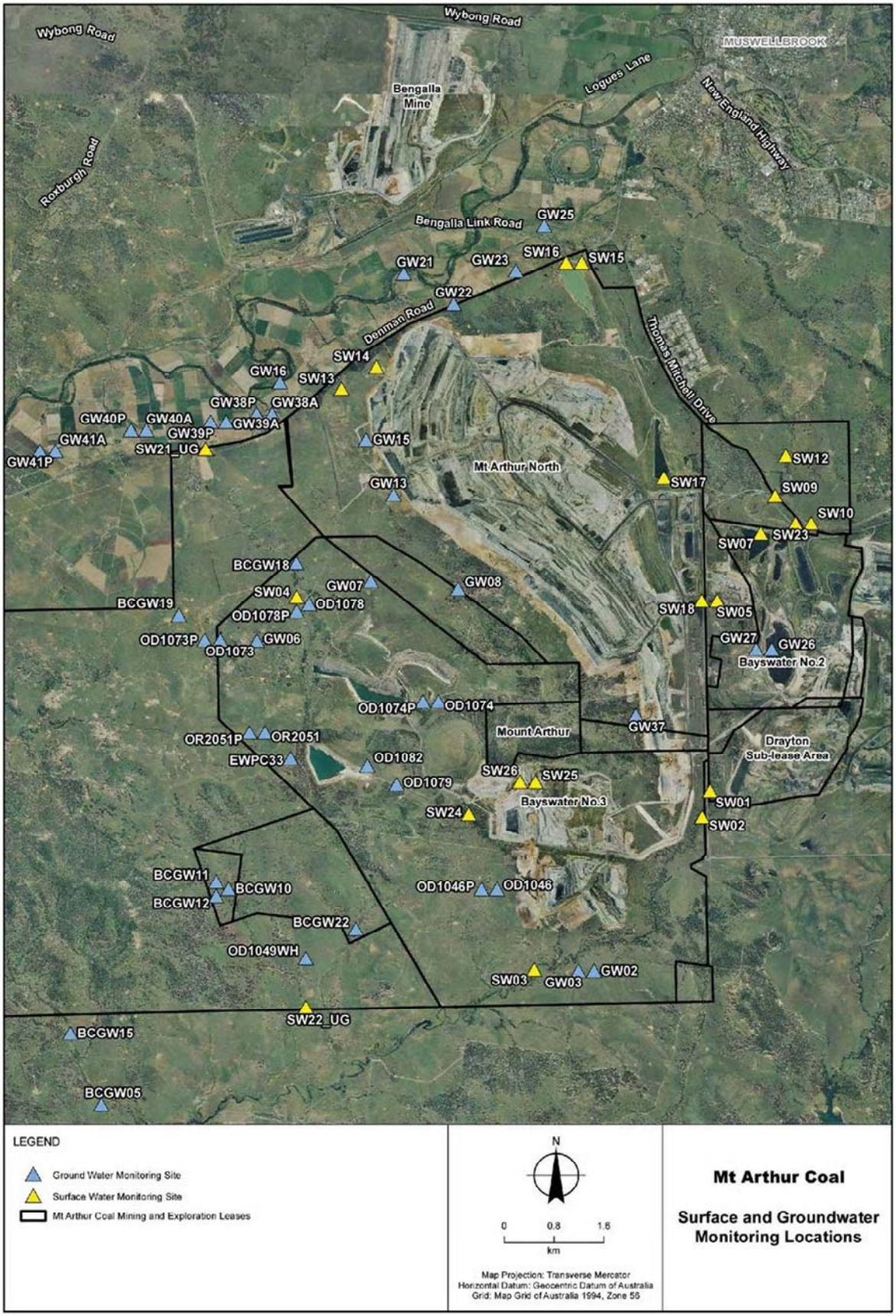


Figure 6: Mt Arthur Coal's surface and ground water monitoring locations

3.3.4 Further Improvements

During the reporting period no water was pumped from the Hunter River. Mt Arthur Coal will continue to use site water collected in both in-pit and out-of-pit storages prior to the use of higher quality water from the Hunter River. Where plans indicate that there would be sufficient water stored on site, water allocations for the Hunter River will be offered to leaseholders and near neighbours as a temporary transfer. Mt Arthur Coal will also continue to investigate water saving opportunities.

During the next reporting period Mt Arthur Coal will commence the installation of a gauging station on Saddlers Creek. With the recent approval of the monitoring program, Mt Arthur Coal will plan are underway to gain suitable access conditions to construct of the station within the next reporting period.

Table 13: Mt Arthur Coal's water balance

Water Inputs (ML)		
Pumped from the Hunter River		0.0
Treated effluent from MSC		375.2
Rainfall and runoff captured from site		3,124.5
Groundwater reporting to open cut pits		210.0
Potable water		18.0
Total		**3,727.7**
Water Outputs (ML)		
CHPP	Tailings and coarse reject	2,302.1
	Product	66.6
Stockpile sprays		9.0
Water carts		1,248.0
Industrial area water use		531.8
Potable water consumption		18.0
Discharge under Hunter River Salinity Trading Scheme		87.5
Open water evaporation		511.7
Total[1]		4,774.7

[1] Water outputs includes key water usage and water losses. Some water used is recycled and is considered within the water balance calculation.

3.4 Groundwater

3.4.1 Environmental Management

Groundwater at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-034 Site Water Management Plan;
- MAC-ENC-PRO-062 Groundwater Monitoring Program;
- MAC-ENC-PRO-063 Surface and Ground Water Response Plan.

Surrounding groundwater aquifers are monitored by an independent consultant as required at 46 statutory reporting sites. Analysis of all water samples is undertaken by a NATA accredited laboratory. The location of the groundwater monitoring sites is displayed in Figure 6.

Monitoring of water levels and water quality parameters is undertaken on a bi-monthly basis at the piezometers which generally consist of a small diameter observation well lined with plastic pipe. Chemical speciation is undertaken on all bores twice yearly. Permeability testing is also undertaken during installation of new monitoring bores to determine local groundwater flow conditions.

3.4.2 Environmental Performance

At the key groundwater aquifers EC ranged from 940 µS/cm to 6,540 µS/cm, which is generally consistent with the results from 2009, 2010 and 2011 and below the impact assessment trigger limits for each monitoring location. The pH measured at individual sites remained relatively constant, ranging between 6.6 and 8.0, consistent with the results from 2009, 2010 and 2011 and below the impact assessment trigger limit of 6.5-9.0.

Groundwater depth at each bore remained stable for all piezometers during the reporting period. Similar to the previous year, negative drawdown (rise in water level) was concentrated around the advancing Windmill, Huon and North pit faces. Negative drawdown is also apparent to the south and west of the Saddlers pit face with GW2 recording a -0.6 metre drawdown over the reporting period. These results are consistent with changes in water level as a result of active mining and in line with current approvals and modelled predictions in the environmental assessment.

A summary of the results from the ground water monitoring program are provided for each key aquifer in Table 14.

Table 14: Summary of groundwater monitoring results for the reporting period

Aquifer	EC (µS/cm)		pH		Depth to water (m)	
	Min	Max	Min	Min	Max	Min
Saddlers Creek Alluvial	3,510	4,390	7.5	8.0	5.76	7.66
Hunter River Alluvial	940	5,980	7.1	7.6	8.86	51.49
Hard Rock Groundwater (north west)	3,720	5,200	6.9	7.3	23.24	71.50
West Cut Groundwater	4,430	6,540	6.6	7.1	37.41	38.28

3.4.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to groundwater during the reporting period. There were also no reportable incidents related to groundwater during the period.

3.4.4 Further Improvements

During the next reporting period, Mt Arthur Coal will continue to monitor hydro-geomorphological conditions and evidence of any groundwater ingress as operations progress towards the Hunter River alluvials. Conceptual designs will be progressed for the installation of a low permeability barrier along the point of connections of mining and the alluvium.

3.5 Contaminated Land and Hydrocarbon Contamination

3.5.1 Environmental Management

Contaminated land at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-030 Land Management Plan;
- MAC-ENC-PRO-029 Spill Response;
- MAC-ENC-PRO-028 Storage of Fuels and Chemicals;
- MAC-ENC-PRO-043 Environmental Emergency Response;
- MAC-STE-PRO-013 Hazardous Materials Management Procedure.

Hydrocarbons and other hazardous substances are kept in designated storage compounds designed and managed in accordance with relevant standards and procedures. Monitoring and inspection programs are maintained for these facilities to ensure hazardous materials and wastes are being adequately stored and disposed and that any spills or leaks are promptly reported and managed.

3.5.2 Environmental Performance

Every person employed or contracted by Mt Arthur Coal has a responsibility to take all reasonable steps to prevent harm to the environment occurring from a hazardous substance spill. Should the spill constitute a reportable event under the *Protection of the Environment Operations Act 1997*, Mt Arthur Coal will report the event to the NSW Environment Protection Authority.

During the reporting period, all spills were controlled and contained immediately using emergency spill kits or earthmoving equipment to form a temporary bund. Any contaminated soil was recovered and disposed of in the bioremediation area.

3.5.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to contaminated land or hydrocarbon contamination during the reporting period. There were also no reportable incidents related to contaminated land or hydrocarbon contamination during the period.

3.5.4 Further Improvements

As required by the Mt Arthur Coal Mine Open Cut Consolidation Project Approval, a remedial action plan for the former Bayswater No. 2 infrastructure area will be prepared by a suitably qualified consultant. The action plan will be developed in accordance with the *Contaminated Land Management Act 1997* and applicable guidelines prior to undertaking any overburden placement in the area.

Mt Arthur Coal will continue to implement the requirements of its procedures as they relate to contamination issues.

3.6 Flora and Fauna

3.6.1 Environmental Management

Flora and Fauna at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-027 Flora and Fauna Management Plan;
- MAC-ENC-MTP-030 Land Management Plan;
- MAC-ENC-PRO-012 Clearing and Topsoil Stripping Procedure.

Mt Arthur Coal has a range of management strategies in place to limit impacts on native flora and fauna. The operation's flora and fauna management plan effectively manages the habitat areas within and near the vicinity of the mine, reducing potential impacts on these areas and improving general habitat quality. The management plan is currently being reviewed and incorporated into the Mt Arthur Coal rehabilitation and biodiversity management plan, which was submitted to DoPI for approval during the reporting period.

Each year, Mt Arthur Coal undertakes flora and fauna monitoring to track progress against the management plan objectives. The monitoring program is aimed at tracking the condition of habitat areas over time and ensuring that the management plan's established performance indicators and project approval requirements are being met.

3.6.2 Environmental Performance

The annual flora and fauna monitoring program and the annual targeted survey for the endangered population of Pine Donkey Orchid, *Diuris tricolor*, is undertaken during the spring months of September to November. Results from this monitoring will be captured within the next reporting period.

Wild dog and fox management activities continued on land owned by Mt Arthur Coal during the reporting period with wild dog and fox baiting undertaken during May and June 2012. Results were positive with baits taken from 41 of the 61 baiting locations.

3.6.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to flora and fauna during the reporting period. There were also no reportable incidents related to flora and fauna during the period.

3.6.4 Further Improvements

Under the consolidation project approval, Mt Arthur Coal has committed to rehabilitate 500 hectares of Box-Gum Grassy Woodland to provide large areas of habitat adjacent to the offset areas and enable connectivity for fauna and flora. Native seed was collected during the reporting period and will continue to be collected across site to incorporate into the rehabilitation work. The collected seed will be used for rehabilitation during the next reporting period.

3.7 Weed Management

3.7.1 Environmental Management

Weed management at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-030 Land Management Plan.

Weeds were continually monitored through regular inspections conducted by Mt Arthur Coal and local land managers. Monitoring is aided by feedback from mining personnel and lessees to identify areas of weed infestation. A geographic information system database also assists to locate and capture land management data to monitor and program future remediation works.

In 2010, Mt Arthur Coal developed a weed action plan to improve the management of noxious and environmental weeds, which identifies priority areas as well as individual species requiring management. Mt Arthur Coal will continue to treat for weeds and monitor all previously treated areas in the next reporting period.

3.7.2 Environmental Performance

Mt Arthur Coal's weed treatment program continued during the reporting period, with approximately 150 hectares of land targeted for treatment including the mine site boundary, topsoil stockpiles, rehabilitation areas and off-site offset areas. The weed treatment program primarily targeted Galenia, African Boxthorn, St John's Wort and Prickly Pear. Results from the weed treatment program and follow up inspections suggest that treatment has been effective.

3.7.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to weed management during the reporting period. There were also no reportable incidents related to weed management during the period.

3.7.4 Further Improvements

During the next reporting period, Mt Arthur Coal will review the weed action plan and additional weed management activities will be undertaken including targeting spraying of Mother of Millions along the Saddlers Creek conservation area and St John's Wort, which has increased in prevalence.

3.8 Blasting

3.8.1 Environmental Management

Blast management at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-015 Blast Management Plan;
- MAC-ENC-PRO-055 Blast Monitoring Program;
- MAC-ENC-PRO-014 Drill and Blast Procedure;
- MAC-ENC-MTP-024 Road Closure Management Plan.

Mt Arthur Coal has developed and implemented a blast management plan to detail the relevant blasting and vibration impact assessment criteria and compliance procedures and controls related to open cut blasting activities. The blast management plan was prepared to ensure compliance with the requirements of the Mt Arthur Coal Mine Open Cut Consolidation Project Approval and the EPL conditions.

Mt Arthur Coal has a blast monitoring system that includes six blast monitors, as shown in Figure 7. During the year, all blast monitors were calibrated in accordance with relevant Australian standards by a NATA accredited laboratory.

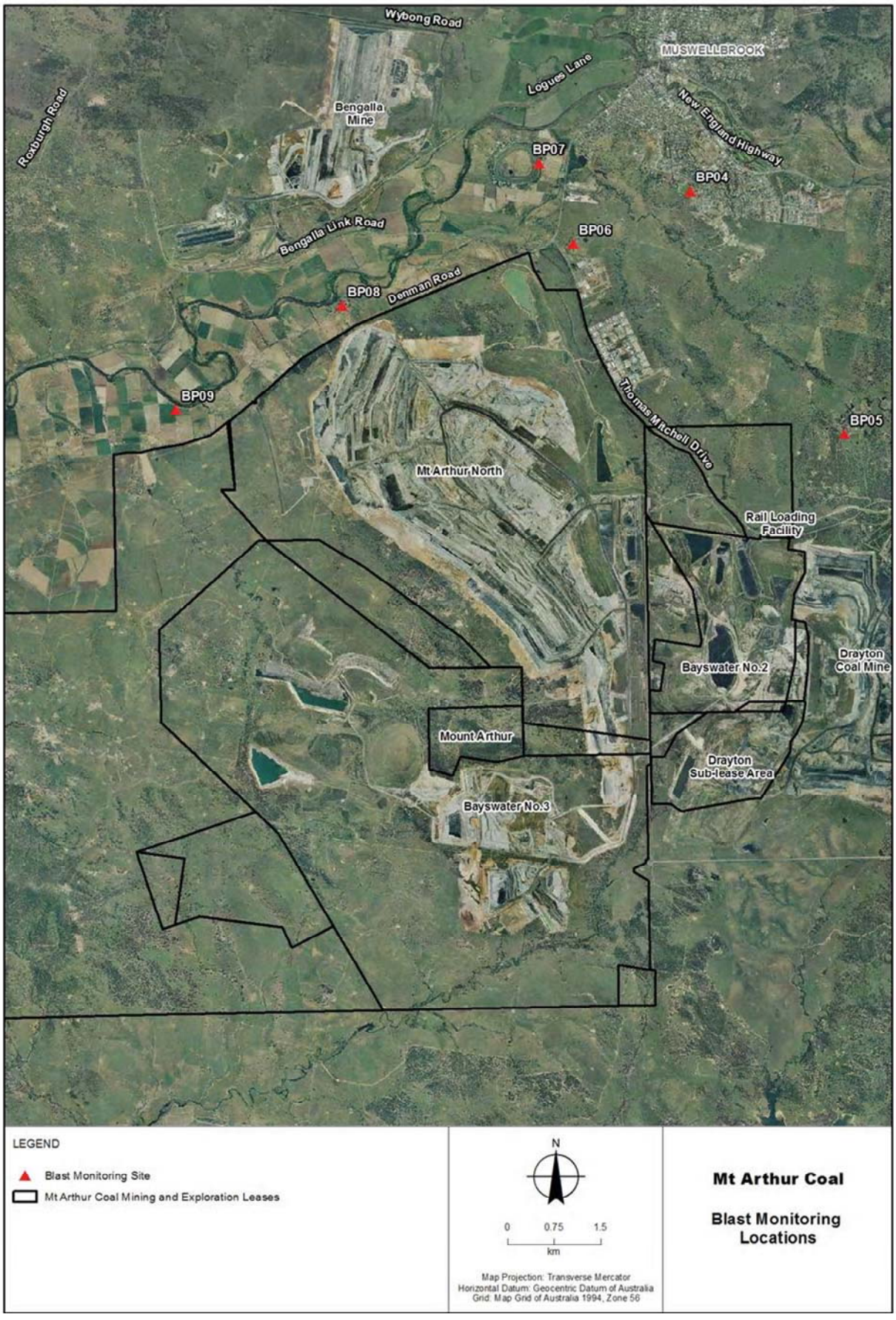


Figure 7: Mt Arthur Coal's blast monitoring locations

Prior to each blast, a pre-blast environmental assessment was carried out to gauge the severity of the possible impacts on the surrounding community and the environment. The assessment includes a review of wind speed and direction, the strength of temperature inversions (if present) and the location and size of the blast. Mt Arthur Coal consults surrounding mines regarding scheduled blast times to avoid multiple blasts being fired at the same time and advises near-neighbours by phone and in writing.

Mt Arthur Coal is committed to reducing the impacts of blasting on the community and its near-neighbours by implementing a range of mitigation measures, many of which exceed statutory requirements. Blasts have been designed to minimise the effects of air blast overpressure and ground vibration on blast-sensitive features and the neighbouring community.

Some of the measures undertaken during the reporting period to reduce blasting impacts included:

- modelling potential impacts prior to blasting;
- using appropriate stemming material in the blast hole;
- controlling blast charges;
- undertaking pre-blasting environmental assessments;
- assessing the risk of fume for each blast;
- notifying other mines and nearest residents of proposed blast times;
- extensively using electronic initiation systems to manage vibration;
- advertising planned blast times on the BHP Billiton website;
- delaying blasts where weather conditions represented an unacceptable risk of off-site impacts;
- modifying blasting methods to ensure compliance with environmental limits;
- undertaking periodic structural inspections of blast-sensitive structures.

Blasting activities can only be undertaken between 9 am and 5 pm Monday to Saturday, inclusive. No blasting is allowed on Sundays, public holidays or at any other time without written approval from DoPI.

3.8.2 Environmental Performance

Under the Mt Arthur Coal Mine Open Cut Consolidation Project Approval, ground vibration is limited to 10 mm/s and overpressure noise limited to 133 decibels (linear) at BP08. At all other sensitive receptors, ground vibration is limited to 10 millimetres per second (mm/s) and overpressure noise is limited to 120 decibels (linear). Ground vibration and overpressure are also limited to 5 mm/s and 115 decibels (linear) respectively for 95 per cent of blasts at all sites except BP08.

There were 71 blasts recorded during the reporting period. A summary of the results from the monitoring stations, together with pictorial representation of the trends, are provided in Appendix 5. Results generally reflected predictions made in the Mt Arthur Consolidation Project Environmental Assessment. Mt Arthur Coal will continue to modify blasting methods to ensure compliance with environmental limits.

The average overpressure recorded was 96.7 decibels (linear). Comparison with the previous year's data shows a slight increase as mining operations progress in the northern end of the pit. The highest overpressure result of 121.5 decibels (linear) was recorded on 24 May 2012 at BP06 and is discussed further in section 3.8.3.

The average ground vibration recorded was 0.42 mm/s, which is lower than the average recorded over the last reporting period. The highest ground vibration result of 14.58 mm/s was recorded on 18 May 2012 at BP09 and is discussed further in section 3.8.3.

The blast data capture rate was 100 per cent for all monitors with the following exceptions:

- BP06 recorded a blast capture rate of 98.6 per cent for the reporting period following a result not captured due to the monitor being offline for calibration at the time of the blast.
- BP09 recorded a blast capture rate of 98.6 per cent for the reporting period following an invalid blast vibration result described in section 3.8.3.

3.8.3 Reportable Incidents

Five blasts were recorded above the air blast overpressure threshold limit of 115 decibels (linear). Two of these blasts recorded above the 120 decibels (linear) maximum limit for air blast overpressure and one blast was recorded above the ground vibration of 10 mm/s. These blasts were reported to DoPI and a full investigation was conducted by Mt Arthur Coal. Details of the investigation outcomes are provided below.

On 18 May 2012, monitor BP09 recorded a ground vibration result of 14.58 mm/s, generating six complaints from local residents. The investigation concluded that the probable cause for the high vibration reading was failure to rectify an air gap between the concrete mounting block and the soil due to inadequate coupling between the blast monitor and the surrounding ground. The investigation determined that the actual vibration reading at BP09 was approximately 7 mm/s. The investigation also highlighted that the probable cause for the complaints was due to both the vibration frequency of the shot and the six second time duration which added to the perception of a high vibration shot.

On 24 May 2012, monitors BP06 and BP07 recorded overpressure results in excess of the 120 decibels (linear) limit, generating nine complaints from local residents. The investigation concluded that the high overpressure levels recorded were due to increased emission from an explosive charge as a result of one hole not being adequately contained. The results were also possibly heightened due to meteorological conditions at the time of the blast.

Mt Arthur Coal did not receive any government fines or penalties related to blasting during the reporting period.

3.8.4 Further Improvements

In the next reporting period a blast fume protocol will be developed to reduce the quantities of visible blast fume generated, and ensure that if fume is produced it has no potential to leave site.

3.9 Noise

3.9.1 Environmental Management

Noise management at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-032 Noise Management Plan;
- MAC-ENC-PRO-056 Noise Monitoring Program.

Mt Arthur Coal has a range of management strategies in place to limit impacts of noise. The operation's noise management plan details the relevant noise impact assessment criteria, compliance procedures and controls relating to mining activities. Prepared to fulfil the requirements of the Mt Arthur Coal Consolidation Project Approval and the conditions of EPL No.11457, the plan ensures:

- all relevant statutory requirements and BHP Billiton policies and standards are met;
- the impact of noise from mining operations on the community and environment are managed and minimised;
- an effective response mechanism to deal with issues and complaints are maintained;
- the results of noise monitoring comply with applicable criteria.

Noise management controls include a range of mine planning, operational and engineering measures such as separate day and night dumps, testing the sound power of mobile equipment, considering seasonal influences on noise impacts during mine planning and real-time monitoring and alarming systems. These controls were applied during the reporting period and revised as appropriate.

To adequately sample the noise environment, attended monitoring is undertaken by an independent consultant at eight statutory monitoring locations as shown in Figure 8. During the reporting period, the frequency of attended monitoring was changed from quarterly to monthly, with the first monthly monitoring occurring for May 2012.

Attended monitoring involves an acoustic consultant listening and measuring dominant noise sources at various locations for a period of time. This data can be correlated with real-time monitoring results and is used to determine Mt Arthur Coal's contribution to the total noise. The attended noise surveys comprise of one night measurement at each location. Attended monitoring is only conducted at night when atmospheric conditions can allow noise to travel further from the source.

Monitoring at night enables measurement of noise during worst case conditions. Received levels from various noise sources are noted during attended monitoring and particular attention is paid to the extent of Mt Arthur Coal's contribution. At each monitoring location, the mine's LAeq (15min), which is the average noise energy over a 15 minute period, and LA1 (1min) (in the absence of any other noise) is measured.

The impact assessment includes consideration of mining activity and atmospheric conditions during each measurement. Wind speed and estimated temperature inversion conditions may result in regulatory criteria not being applicable in accordance with the NSW Industrial Noise Policy. The assessment and investigation process for exceedances undertaken by Mt Arthur Coal is described in the noise monitoring program.

Mt Arthur Coal also has four directional real-time monitors at various locations surrounding the site. These monitors are configured to provide statistical noise data summaries every 15 minutes and this information is used for proactive management rather than statutory purposes.

3.9.2 Environmental Performance

An analysis of periodic attended noise monitoring results indicates Mt Arthur Coal's operations did not exceed the LAeq (15min) or LA1 (1min) statutory limit during the reporting period, with the exception of NP11 results in June 2012.

On 26 June 2012, noise monitoring levels at NP11 recorded a LAeq (15min) of 36 decibels (dB) and LA1 (1min) of 39 dB. Investigations revealed that a continuum from Mt Arthur Coal's operations including a dozer track noise were responsible for the elevated level, resulting in a 1 dB exceedance of the relevant LAeq night impact assessment criterion for this location. In accordance with the NSW Industrial Noise Policy, this result is not considered a non-compliance as the noise level did not exceed the statutory limit by more than 2 dB.

A noise impact assessment was completed for Mt Arthur Coal in 2009 as part of the Mt Arthur Coal Mine Open Cut Consolidation Project Environmental Assessment. Noise modelling was completed for 2011, 2016 and 2022 predicting maximum noise levels under prevailing night conditions for each receiver. The predictions for 2011 remain representative for this reporting period and the monitoring results for the period support the predicted results in the environmental assessment.

The predicted noise levels at Mt Arthur Coal for 2011 are shown in Table 15. A summary of results from Mt Arthur Coal's attended noise monitoring is provided in Tables 15 and 16.

Low frequency noise is assessed by measuring the C-weighted and A-weighted level over the same time period. A correction of 5 dB is applied if the difference between the two levels is 15 dB or more. Low frequency assessments were carried out in accordance with the NSW Industrial Noise Policy.

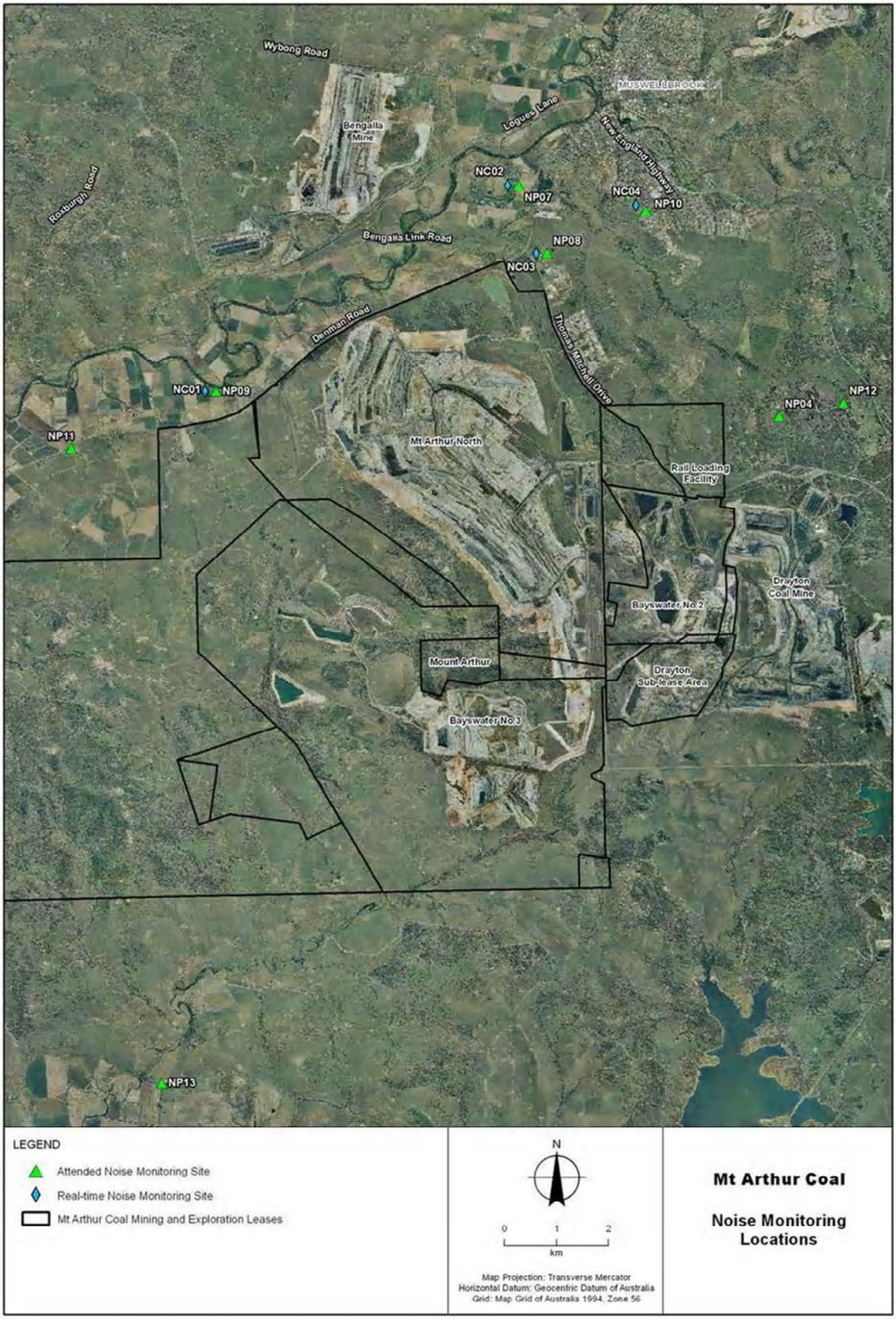


Figure 8: Mt Arthur Coal's noise monitoring locations

On 26 June 2012 a 5 dB penalty was applied at NP11, which represents Zone D and F, in accordance with the NSW Industrial Noise Policy method. This resulted in a 6 dB exceedance of the relevant impact assessment criteria and 1 dB exceedance of the relevant land acquisition criterion. In accordance with the NSW Industrial Noise Policy, this result is not considered a non-compliance as the noise level did not exceed the statutory limit by more than 2 dB. Low frequency noise can also be assessed against criteria specified in *A Simple Method for Low Frequency Noise Emission Assessment (Broner, 2010)*. Results showed that there was no exceedance of this criterion during the reporting period.

Table 15: Mt Arthur Coal's periodic noise monitoring results LAeq (15min)

	NP4	NP7	NP8 [1]	NP9 [1]	NP10	NP11	NP12
Representative residential assessment zone	A	B and C	B	D	E	D and F	G
Noise impact assessment criteria (Intrusive criteria) (LAeq (15min))	38	39	37	35	39	35	39
Land acquisition criteria (LAeq (15min))	43	44	42	40	44	40	44
Predicted noise level for 2011 for each monitoring location	38	37	N/A	N/A	37	35	40
12-13/03/2012 (Q1)	IA	IA	>25	34	IA	28	IA
27-28/03/2012 (Q1)	IA	27	31	26	>25	28	IA
15-16/05/2012	IA	NM	34	42[2]	34	34	IA
25/06/2012	36	36	41[2]	40[2]	NM	36	IA

[1] Monitoring locations NP8 and NP9 are located on land owned by Mt Arthur Coal and therefore the criterion is not applicable.
NM – Mt Arthur Coal's operations were audible but not measurable.
IA – Mt Arthur Coal's operations were inaudible.
N/A – Predicted noise levels were not applicable as monitored on land owned by Mt Arthur Coal.
Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres), or temperature inversion conditions greater than or equal to 4ºC/100m.

Table 16: Mt Arthur Coal's periodic noise monitoring results LA1 (1min)

	NP4	**NP7**	**NP8[1]**	**NP9[1]**	**NP10**	**NP11**	**NP12**
Representative residential assessment zone	A	B and C	B	D	E	D and F	G
Noise impact assessment criteria LAeq (15min)	45	45	45	45	45	45	45
12-13/03/2012 (Q1)	IA	IA	28	42	IA	40	IA
27-28/03/2012 (Q1)	IA	32	42	38	28	43	IA
16-17/05/2012	IA	NM	35	50	34	39	IA
25-26/06/2012	37	37	46	46	NM	39	IA

[1] Monitoring locations NP8 and NP9 are located on land owned by Mt Arthur Coal and therefore the criterion is not applicable.
NM – Mt Arthur Coal's operations were audible but not measurable.

3.9.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to noise during the reporting period. There were also no reportable incidents related to noise during the period.

3.9.4 Further Improvements

In the next reporting period Mt Arthur Coal will engage acoustic consultants to complete noise modelling for winter 2013 to determine the likely change in the acoustic environment at locations around Mt Arthur Coal. The noise modelling will enable Mt Arthur Coal to compare the likely extent of acoustic environment change in winter 2013 to the same period in 2012.

Monitoring will commence in the next reporting period at location NP13.

Mt Arthur Coal will also continue to implement the requirements of applicable noise management procedures to prevent any exceedances from occurring.

3.10 Visual Amenity and Lighting

3.10.1 Environmental Management

Visual amenity and lighting management at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-031 Lighting Management Plan;
- MAC-PRD-PRO-073 Procedure for Lighting Plant Movement and Setup.

Mt Arthur Coal has developed and implemented a lighting management plan to mitigate, control and reduce the impact of lighting on the surrounding area. Additionally, a visual impact assessment was undertaken to identify privately-owned land likely to experience significant visual impacts from Mt Arthur Coal and submitted to DoPI for approval in 2011.

The lighting management plan:

- ameliorates the impact of stationary lighting on surrounding residents and users of Thomas Mitchell Drive, Denman Road, Edderton Road and Roxburgh Road;
- minimises of the spillage of light and total night time flow from the mine, as far as practicable, through the use of technical measures and work and operating practices;
- ensures the implementation of effective processes and measures to address complaints received regarding lighting.

Mt Arthur Coal's mine plan is regularly reviewed by operational supervisors and mining engineers, and the visibility of the site is monitored to minimise visual impact on surrounding areas and the amount of light potentially visible off-site. Risk assessments for new or modified mining activities also include a review or modelling of visual amenity where applicable.

Measures to reduce the visibility of the operation off-site include designing overburden dumps to create visual bunds and barriers to the operation, planning day and night dumps to keep lighting impacts to a minimum, and regularly inspecting lighting plants and the operation to ensure effective management.

3.10.2 Environmental Performance

Landscaped areas, including earth bunds and tree plantings off Edderton Road, Denman Road and Thomas Mitchell Drive continue to successfully screen the Mt Arthur Coal complex, although site areas can be seen from parts of Denman Road, Roxburgh Road and elevated areas around Muswellbrook.

These landscaped areas and other visual screens are inspected annually by members of the Environment and Community team and corrective actions taken where necessary.

In June 2012, Mt Arthur Coal commenced additional tree planting of tube stock propagated from native seed collected on site along sections of Thomas Mitchell Drive to improve the existing screening. Planting is expected to continue into the next reporting period.

During the reporting period, Mt Arthur Coal continued to purchase new mobile light-emitting diode (LED) lighting plants to reduce its impact on the environment and the community. The new lighting system uses high-powered, long-lasting LED lights that reduce the amount of glare and light spillage, effectively minimising the amount of potential light visible off-site. The plants also reduce fuel consumption by 50 per cent and the lights are extra low voltage, eliminates the risk of electrocution for the mine's employees who service the equipment.

3.10.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to lighting or visual amenity during the reporting period. There were also no reportable incidents related to lighting or visual amenity during the period.

3.10.4 Further Improvements

Lighting from Mt Arthur Coal will continue to be implemented in accordance with the EMS and managed to minimise impacts on the local community whilst maintaining the minimum level necessary for operational and safety needs.

3.11 Cultural Heritage

3.11.1 Environmental Management

Cultural heritage at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-018 Macleans Hill Cultural Heritage Management Plan;
- MAC-ENC-MTP-042 Draft Aboriginal Heritage Management Plan.

Mt Arthur Coal operates within an area that is rich in both Indigenous and European cultural heritage. Through its cultural heritage program Mt Arthur Coal assesses and manages significant heritage features that occur on its land. Mt Arthur Coal has implemented management plans that provide the framework to identify, assess, monitor, conserve and manage cultural heritage.

During the reporting period, Mt Arthur Coal developed and submitted an Aboriginal heritage management plan and European heritage management plan to DoPI for approval. The Aboriginal heritage management plan will assist Mt Arthur Coal to mitigate impacts of its operations on Aboriginal heritage, comply with the requirements of the *National Parks and Wildlife Act 1974* and continue its active partnership with the Aboriginal community in the management of cultural heritage.

3.11.2 Environmental Performance

Ground surveys were undertaken during the reporting period by registered archaeologists as a due diligence measure and to verify historical salvages across a number of pre-strip areas as well as in areas proposed for exploration drilling works.

Mt Arthur Coal also inspected all of its historic homesteads and related buildings located on freehold land to ensure properties were maintained to an acceptable standard. Maintenance measures included

painting, fencing repairs, pest control, waste water management, lawn and garden maintenance, drainage improvement and minor structural repairs. Two of the four heritage-listed homesteads continue to be tenanted as part of the strategy to preserve their condition and ensure security and ongoing maintenance of these valued structures.

Conservation management plans for Edinglassie and Rous Lench homesteads were lodged with DoPI for approval during the reporting period. The Beer Homestead was approved for relocation under the Mt Arthur Coal Mine Open Cut Consolidation Project Approval, and a detailed plan for the relocation will be completed when required.

3.11.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to cultural heritage during the reporting period. There were also no reportable incidents related to cultural heritage during the period.

3.11.4 Further Improvements

Mt Arthur Coal's Aboriginal heritage management plan is expected to be approved during the next reporting period. Following approval, salvage works will commence in pre-strip areas in advance of the active pit.

3.12 Spontaneous Combustion

3.12.1 Environmental Management

Spontaneous combustion at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-PRG-002 Spontaneous Combustion Control Program.

Mt Arthur Coal has implemented a spontaneous combustion control program to prevent, monitor, control and report outbreaks of spontaneous combustion. Working with the survey team, Mt Arthur Coal inspects all active mining areas each month to monitor elements such as surface cracking, visible smoke, odour and the location of new and existing outbreaks. A monthly summary report is produced with a calculation of the total area affected and a map showing the areas of combustion.

Spontaneous combustion at Mt Arthur Coal is predominantly confined to old mining areas at Bayswater No. 2 and the Drayton sublease area. This is a result of the higher levels of carbon and sulphuric material in the coal seams mined in these Greta measures in comparison to those mined in the different Wittingham measures at the former Bayswater No. 3 and Mt Arthur North mining areas. During 2011, an action plan was established to treat spontaneous combustion outbreaks in the Drayton sublease area, and mine plans were developed to conduct the treatment required. The construction of a haul road to allow for the emplacement of suitable overburden in line with the action plan, which was delayed in 2011, was resumed in March 2012.

A thermal imagery scan flight to monitor spontaneous combustion was undertaken during the reporting period following the successful trial of airborne thermal scanning in 2011. The airborne scanning confirmed the areas of spontaneous combustion indicated by the monthly visual inspections.

3.12.2 Environmental Performance

During the reporting period there was an 18 per cent decrease in the amount of area affected by spontaneous combustion. This decrease occurred for a number of reasons including warmer weather conditions during monthly surveys that limited the identification of spontaneous combustion and the strategic emplacement of overburden to seal spontaneous combustion outbreaks.

An area of approximately 4,563 square metres (m^2) was affected by spontaneous combustion at the start of the reporting period. A total of 232 m^2 was treated during the January to July 2012 reporting period by the emplacement of overburden over areas affected by spontaneous combustion. A haul road into the Drayton sublease area was constructed and 23 m^2 was sealed in this sublease during April 2012.

The majority of the repair work was conducted during May 2012, resulting in 199 m^2 being extinguished. Some minor work was also undertaken during June 2012. In addition, a total of 1,271 m^2 was naturally extinguished during the reporting period. A summary of the spontaneous combustion recorded for the reporting period is presented in Table 17.

Similar to 2009, 2010 and 2011, monitoring during the reporting period revealed a low spontaneous combustion hazard around the site. All areas affected by spontaneous combustion during the monitoring period were classified as minor and evident in the form of occasional steam or smoke, posing a low risk to both employees and the environment.

Table 17: Spontaneous combustion summary for the reporting period

Month	Area affected at start of month (m^2)	New or recurring areas (m^2)	Area naturally extinguished (m^2)	Area Treated (m^2)	Area affected at end of month (m^2)
January	4,563	194	139	0	4,618
February	4,618	92	654	0	4,056
March	4,056	90	251	0	3,895
April	3,895	85	16	23	3,941
May	3,941	257	111	199	3,888
June	3,888	22	100	10	3,800

3.12.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to spontaneous combustion during the reporting period. There were also no reportable incidents relating to spontaneous combustion during the period.

3.12.4 Further Improvements

In accordance with the approved mine operations plan, overburden material will continue to be emplaced over much of the current infrastructure and emplacement areas at Bayswater No.2. This will be carried out in alignment with the design of the new tailings storage facility, which is planned to encompass most of this area, and will ultimately treat a significant portion of identified spontaneous combustion areas.

Mt Arthur Coal will continue to assess airborne thermal scanning as a best practice method for monitoring spontaneous combustion.

3.13 Bushfire

3.13.1 Environmental Management

Bushfire at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-020 Bushfire Management Plan;
- MAC-STE-PRO-010 Emergency Procedure – Bushfires.

The bushfire management plan documents fire prevention and control measures to reduce the occurrence of bushfires within the surrounding area and to protect the operations from bushfire.

3.13.2 Environmental Performance

Specific prevention and fire suppression control measures are implemented in order to protect patches of remnant vegetation as well as Mt Arthur Coal's infrastructure. Prevention measures at Mt Arthur Coal mine include fuel load reduction programs, the creation and maintenance of fire breaks and the prevention of ignition sources. Fire suppression and control is achieved through on-site fire fighting equipment, including a rescue truck and water carts, facilitated by the network of roads and access tracks at the mine site which provide access to all areas of the site.

During the reporting period, there were no bushfires at Mt Arthur Coal. Mt Arthur Coal also maintained a trained emergency response team on each shift, and fire extinguishers are fitted in all vehicles and buildings.

3.13.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to bushfire during the reporting period. There were also no reportable incidents related to bushfire during the period.

3.13.4 Further Improvements

Mt Arthur Coal will continue to ensure that protection against bushfire is provided through the development of various control methods. During the next reporting period, Mt Arthur Coal will undertake an inspection of the train load-out facility with the Rural Fire Service, as part of their recently approved Bushfire Risk Management Plan, to assess the risk of bush and grass fires.

3.14 Greenhouse Gas and Energy

3.14.1 Environmental Management

Greenhouse gas at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-040 Air Quality and Greenhouse Gas Management Plan.

Mt Arthur Coal has been working towards technological solutions to reduce greenhouse gas emissions and increase energy efficiency. Regular monitoring of fuel, electricity consumption and fugitive gas emissions is an important aspect of greenhouse gas and energy abatement and enables progressive assessment and prioritisation of actions to support operational growth and change.

During the reporting period, Mt Arthur Coal continued greenhouse gas and energy consumption monitoring with the use of a centralised database to assist with monthly tracking and reporting of key emission sources. A specific focus during the reporting period was to ensure the operation complied with the regulations under the *National Greenhouse and Energy Reporting* (NGER) *Act 2007*. The NGER Act provides a single national framework for reporting and disseminating information related to greenhouse gas emissions, greenhouse gas projects, energy consumption and energy production of corporations. Mt Arthur Coal's data capture and reporting strategy assists in ensuring that all Scope 1 and Scope 2 emission sources defined in the regulation are monitored using a consistent approach.

As required under the Federal Government's Energy Efficiency Opportunities (EEO) legislation, Mt Arthur Coal continued to investigate potential projects to mitigate, substitute, reduce or eliminate energy consumption.

3.14.2 Environmental Performance

During the reporting period, 92 per cent of energy used at Mt Arthur Coal was attributed to diesel and biodiesel use in mobile and stationary equipment. Consistent with the previous year's results, electricity use by the CHPP and electric shovels accounted for the majority of the remaining energy used.

Scope 1 emissions were similar to 2009, 2010 and 2011 and accounted for approximately 95 per cent of all greenhouse gas emissions. Seventy-six per cent of Scope 1 emissions resulted from fugitive emissions during the coal mining process and 24 per cent from diesel combustion. The remaining 5 per cent of emissions were from Scope 2 sources, in particular from the use of off-site generated electricity.

3.14.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to greenhouse gas or energy during the reporting period. There were also no reportable incidents related to greenhouse gas or energy during the period.

3.14.4 Further Improvements

Research on coal seam gas levels was undertaken to better understand Mt Arthur Coal's fugitive emissions. Further drilling is expected to commence during the next reporting period to collect additional data and increase analysis of coal seam gas levels in relation to the advancing pit. This work will contribute towards the improved measurement of fugitive emissions reportable under the NGER legislation.

3.15 Waste Management

3.15.1 Environmental Management

Waste at Mt Arthur Coal is managed in accordance with the:

- MAC-ENC-MTP-038 Waste Management Plan;
- MAC-ENC-PRO-032 Waste Handling and Disposal.

Mt Arthur Coal's waste management system has been designed to meet both legislative and BHP Billiton requirements that seek to minimise the generation of waste and maximise reuse and recycling. This system consolidates the disposal, tracking and reporting of all waste generated on site.

To ensure the waste management system is working effectively and remains appropriate for the changing needs of the operation, regular inspections and monitoring is conducted. During the reporting period, Mt Arthur Coal's waste contractor conducted weekly site inspections of all areas where wastes were being generated and stored.

3.15.2 Environmental Performance

During the reporting period Mt Arthur Coal's mining and related activities generated 3,959 tonnes of waste. The recyclable component of the waste produced in the reporting year was 89 per cent. Similar to 2009, 2010 and 2011, the largest contributors to total waste were effluent (50 per cent), waste oil (21 per cent), general waste (10 per cent) and scrap steel (9 per cent). With the exception of general waste, all waste generated at Mt Arthur Coal was recycled.

3.15.3 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to waste during the reporting period. There were also no reportable incidents related to waste during the period.

3.15.4 Further Improvements

General awareness through toolbox talks and other site communications will continue during the next reporting period to ensure Mt Arthur Coal achieves high levels of compliance in the areas of waste segregation and tracking.

3.16 Public Safety

3.16.1 Environmental Management and Performance

In late 2011, Mt Arthur Coal started the installation of a security fence around the perimeter of its site to ensure no unauthorised access to mining areas. The fence is being installed on land owned by Mt Arthur Coal along the general alignment of the existing fence line. The fence will meet BHP Billiton's safety and asset protection standards as well as Mt Arthur Coal's legislative requirements under the *Coal Mine Health and Safety Act 2002*. Direct neighbours and relevant stakeholders were informed of the project in writing in December 2011.

The first stage of the project which involved fencing along Denman Road between Thomas Mitchell Drive and Edderton Road, as well as a small section along Edderton Road from the Denman Road intersection, was completed during the reporting period. During the next reporting period, Mt Arthur Coal will continue to install the security fence along Thomas Mitchell Drive.

3.16.2 Reportable Incidents

Mt Arthur Coal did not receive any government fines or penalties related to public safety during the reporting period. There were also no reportable incidents related to public safety during the period.

3.17 Meteorological Data

3.17.1 Environmental Management and Performance

Mt Arthur Coal's real-time meteorological station, located at the mine's industrial area (WS09), is an essential component of the operation's environmental monitoring system. At the station, wind speed, wind direction, temperature, rainfall, solar radiation and humidity data is collected at 10 minute intervals and relayed in real-time using radio telemetry.

Data taken from WS09 during the reporting period showed total rainfall of 361.8 millimetres, a decrease compared to the same period in the previous year. The maximum monthly temperature recorded from January to June 2012 was 34.6 degrees Celsius (°C) in January 2012 and the minimum monthly temperature was 1.3 °C in June 2012. Ambient temperatures for 2012 were consistent with the previous year's temperatures over the same period. Similar to previous years, wind direction at Mt Arthur Coal during the period dominated from the south east, although winds from the north west were also common during the period.

A summary of the meteorological data for the reporting period can be found in Appendix 6.

4 Community Relations

Mt Arthur Coal is committed to minimising the impacts of its operations and being an active participant and contributor to sustainable community development programs that benefit local people. Mt Arthur Coal has comprehensive community engagement and development programs to identify and respond to the evolving needs and issues that are important to local people.

4.1 Environmental Complaints

As part of its EMS, Mt Arthur Coal has a procedure for receiving, investigating, responding and reporting complaints received from the community. Mt Arthur Coal invites the community to provide feedback about its operations through a free-call 24-hour Community Response Line (1800 882 044), which is advertised in the local phone directory, newspapers and the Community Matters newsletter and at www.bhpbilliton.com.

When complaints are received they are immediately investigated and, where possible, a response is provided to the complainant. Observations and learnings from complaint investigations are incorporated into mine planning and environmental management as appropriate to minimise the potential of the issue reoccurring. Complaint details are also recorded in a database for review within the organisation and reported regularly to CCCs, government agencies and the community.

During the reporting period, Mt Arthur Coal received 84 complaints from community members and near neighbours in comparison to 91 complaints in 2011, 49 complaints in 2010 and 37 complaints in 2009. A comparison of complaints received during the reporting period against previous years is shown in Figure 9 and a complete register of complaints is provided in Appendix 7.

Blasting activities including blast vibration, overpressure, dust and fume and road closures accounted for 36 complaints, or 43 per cent of the total complaints received during the reporting period. The increase in blast related complaints is due to an increase in blasting in the northern end of the mine which is close to neighbouring residents.

Two blasts exceeded the statutory limits during the reporting period, which received nine and seven complaints respectively. Information regarding the investigation of these two exceedances can be found in section 3.8.3. On four occasions more than one complaint was received about a single blast activity. Investigations verified that blast monitoring results on each occasion were within statutory limits.

During the reporting period, Mt Arthur Coal received 28 complaints related to noise. Of these 26 were from a single resident on Roxburgh Road concerned about low frequency mining noise. Discussions were held with neighbouring mines and investigations conducted in an attempt to determine and address the source of this noise. Real-time monitoring at the time of each complaint showed that noise levels from Mt Arthur Coal were within statutory limits.

Eleven lighting complaints were received from residents on Roxburgh Road and Denman Road during the reporting period. In cases where complaints were received at night, Mt Arthur Coal's lighting plants were immediately redirected or relocated to address the complainant's concern.

Mt Arthur Coal received seven dust complaints during the reporting period. In each case, real-time air quality monitoring results were within statutory limits and appropriate control measures were in place. Two business process complaints were received regarding the timing of payment to external stakeholders. In both instances the issues were promptly followed up and rectified.

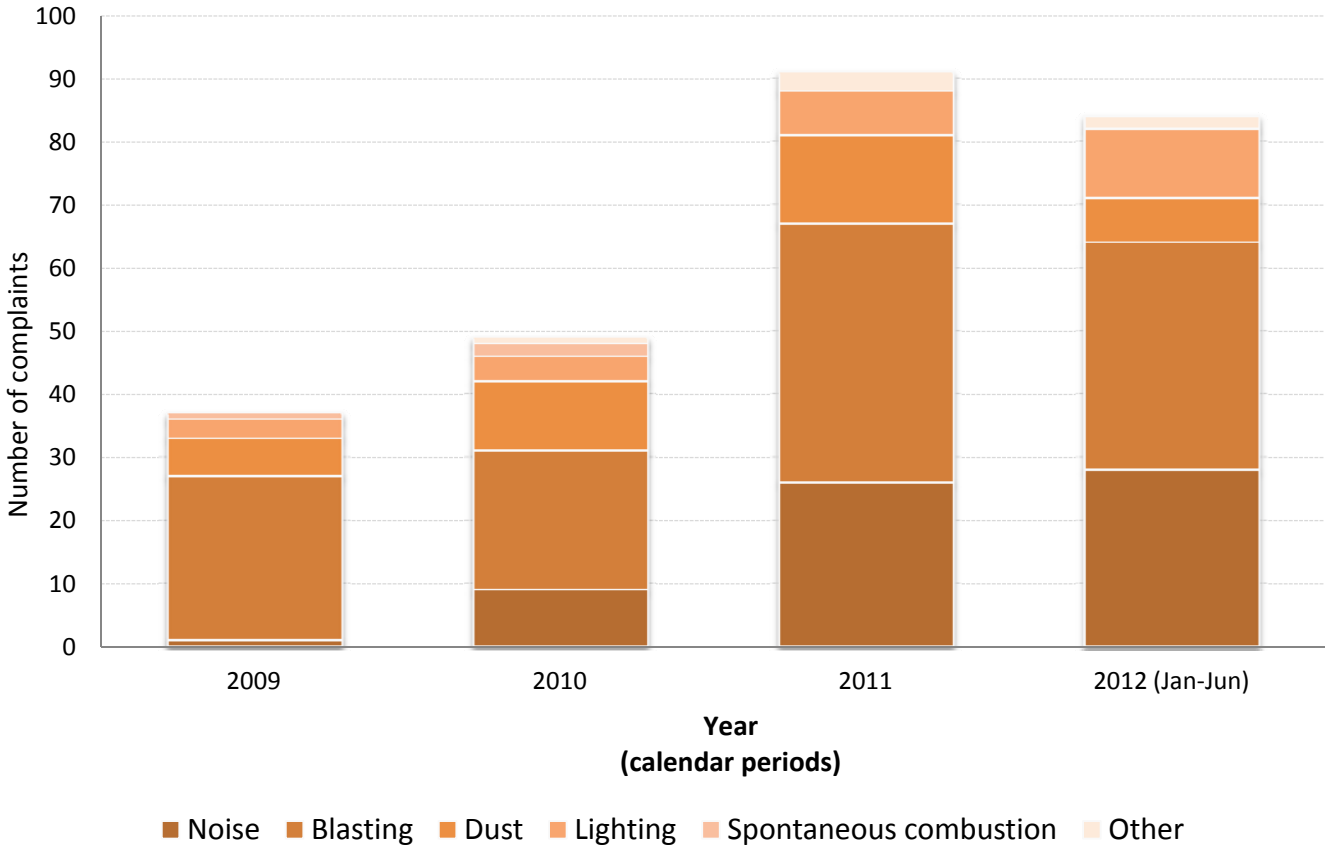


Figure 9: Comparison of complaints received during current and previous reporting periods

4.2 Community Liaison

During 2010 to 2011, Mt Arthur Coal delivered an industry leading, comprehensive engagement program that applied multiple engagement strategies and communication tools within its local communities. The program engaged stakeholders across a diverse range of sectors including near-neighbours, local residents, regional industry and mining companies, community groups, NGOs and local, state and federal governments.

Mt Arthur Coal's community engagement continues to build on principles established through this initiative, including transparency, participation, collaboration and inclusiveness. Engagement is the foundation for Mt Arthur Coal's investment planning process and allows all community stakeholders to have a voice in the way community development is understood and initiated.

4.2.1 Website and Media

Mt Arthur Coal continues to maintain its section of the BHP Billiton website (www.bhpbilliton.com) to provide the community access to information about the operation including project approval material, blast schedules, CCC meeting minutes, community complaints records and environmental management plans. Mt Arthur Coal also places advertisements and undertakes a range of media activities to inform the community about its operations, projects and community investment activities.

Mt Arthur Coal's free-call 24-hour Community Response Line (1800 882 044) continues to operate in 2012 to allow the community to contact the operation directly to ask questions or raise concerns about mining activities.

4.2.2 Community Consultative Committee

During the reporting period, Mt Arthur Coal coordinated and participated in six CCC meetings, including three extraordinary meetings in February and March. The dates of the meetings are provided in Table 18. These meetings provided an opportunity for community representatives to discuss issues relating directly to Mt Arthur Coal's mining operations, environmental performance, monitoring results and community relation activities.

Key discussions at the Mt Arthur Coal CCC meetings during the reporting period included:

- operational schedules, infrastructure and equipment upgrades, and processing, transport and production results;
- environmental monitoring and results;
- community investment and engagement activities;
- environmental management plans, rehabilitation activities and the rehabilitation strategy;
- updates on the mine's expansion plans.

Mt Arthur Coal was also involved in two Mt Arthur Coal and Anglo Coal (Drayton Management) Joint CCC meetings during the reporting period to discuss issues surrounding rail movements, air quality and noise monitoring results relating to the joint rail loading facility.

The CCCs are operated in accordance with DoPI *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* and meetings are attended by employees from Mt Arthur Coal Management and Environment and Community teams, MSC representatives and local residents. Meeting minutes are available on the BHP Billiton website.

Table 18: Mt Arthur Coal Community Consultative Committee meetings during the reporting period

Mt Arthur Coal CCC
1 February 2012
16 February 2012 (extraordinary meeting)
14 March 2012 (extraordinary meeting)
28 March 2012 (extraordinary meeting)
4 April 2012
6 June 2012
Mt Arthur Coal and Anglo Coal (Drayton Management) Joint CCC
16 February 2012
10 May 2012 (extraordinary meeting)

4.2.3 Community Education

Site visits provide an opportunity for Mt Arthur Coal to educate the community and stakeholders about the scale and size of its mining operations and its EMS. During the reporting period, Mt Arthur Coal conducted site visits for a number of stakeholders including Waverley College, the New South Wales Minerals Council Rehabilitation Working Group, the University of New South Wales Mineral Summer School and TAFE Mining Skills.

4.2.4 Community Investment

The Mt Arthur Coal Community Investment Fund provides opportunities for community organisations to approach Mt Arthur Coal with proposals for sponsorships and donations. During the reporting period, Mt Arthur contributed significantly to several community organisations, as shown in Table 19. The distribution of investment spend is across a range of quality of life themes including health, education and childcare, arts and culture, infrastructure and transport, environment, community development, sports and recreation, housing and accommodation and Aboriginal communities.

Central to Mt Arthur Coal's commitment is a voluntary planning agreement (VPA) with MSC. Established as a requirement under the *Environmental Planning and Assessment Act 1979*, the VPA is designed to ensure that Mt Arthur Coal contributes to public amenities or services that may be impacted by the growth of its mining operations. Areas of annual spend include the upgrade of Thomas Mitchell Drive and other community infrastructure, ongoing environmental monitoring or environmental assessments and maintenance of the Muswellbrook Heated Pool. Mt Arthur Coal has also contributed to the MSC Community Development Fund which supports projects that have an economic, social or environmental benefit for the community.

Table 19: Community investment fund recipients from January to June 2012

Organisation	Event
Muswellbrook and District Camera Club	Photographic Awards
Upper Hunter Performing Arts	"The Beat Goes On" Musical
Aberdeen Highland Games	Aberdeen Highland Games
Upper Hunter NAIDOC Week Awards 2012	NAIDOC Week Awards 2012
Wanaruah Local Aboriginal Land Council	Muswellbrook Reconciliation Awards
Newcastle University	Engineering Student Racing Project
Muswellbrook Stroke Recovery Club	Support Group
Denman Chamber of Commerce	Denman Food and Wine Affair 2012
NSW Minerals Council	Minerals Education Bursary Scheme
Muswellbrook and Upper Hunter Eisteddfod	Eisteddfod 2012
St Joseph's School, Denman	Trade Training Centre
Bursting with Energy Expo	Bursting with Energy Expo
Scone Horse Trials Committee	Scone Horse Trials 2012
Muswellbrook High School	Gifted and Talented Student Sponsorship

4.2.5 Community Partnerships

Mt Arthur Coal has established long-term partnerships with a number of community organisations and activities that support sustainable community development. Community funding agreements are developed for each partnership and projects are evaluated annually to ensure the objectives and deliverables outlined in the agreements are achieved.

4.2.6 Employee Participation

Mt Arthur Coal employees are encouraged to be involved in the operation's Corporate Citizenship program and to support local organisations in need by volunteering their time at local community events. Mt Arthur Coal representatives also attend a number of community events sponsored through the Community Development Fund.

The events and activities supported and attended by Mt Arthur Coal employees during the reporting period included Clean Up Australia Day, the Bursting with Energy Expo, Muswellbrook Public School Karoola Park Cross Country, the Wybong Hall opening, the 2012 Muswellbrook Chamber of Commerce and Industry Business Awards, Denman Pony Club - Denman Horse Trails, Scone Public School Food and Fireworks, Denman Sandy Hollow Junior Rugby League Home Games and the Muswellbrook and Upper Hunter Eisteddfod 2012.

The BHP Billiton Matched Giving Program financially matches the contributions that its employees make to charity and not-for-profit organisations through volunteering, fundraising or personal donations. Each year, individual employees are entitled to claim up to $50,000 of matched funds through the Matched Giving Program.

Mt Arthur employees continued to organise and participate in fundraising events and activities that were eligible to be matched through the program. During the reporting period, Mt Arthur Coal donated $41,900 to more than 27 different charities and not-for-profit organisations through the BHP Billiton Matched Giving Program. Significant matched-giving initiatives included more than $12,000 for the Lions Club of Denman and $8,000 for Lifeline Newcastle and Hunter.

5 Rehabilitation

5.1 Buildings

In line with the growth of the operations, a number of infrastructure upgrade projects were completed by Mt Arthur Coal during the reporting period. Projects included a new maintenance workshop commissioned in June 2012 and installation of temporary structures including car parks, contractor office buildings and water tanks.

Work continued on the construction of the new first aid facility which is expected to be completed early in the next reporting period. Work will also commence on the construction of the new heavy vehicle wash bay.

As discussed in section 3.10.2, Mt Arthur Coal inspected all of its historic homesteads and related buildings to ensure properties were maintained to an acceptable standard.

5.2 Rehabilitation of Disturbed Lands

Rehabilitation of disturbed areas is an integral and progressive feature of mining. Mt Arthur Coal manages its rehabilitation activities in accordance with good rural land management practices and statutory requirements, and ensures restored areas are compatible with the surrounding landform and future land uses.

Rehabilitation of land is carried out in general accordance with the mining operations plan and Mt Arthur Coal's draft rehabilitation strategy. In accordance with the Mt Arthur Coal Mine Open Cut Consolidation Project Approval, a biodiversity and rehabilitation management plan (B&RMP) was submitted to DT&I and DoPI for approval in March 2012.

The following rehabilitation goals underpin the rehabilitation strategy at Mt Arthur Coal:

- successful design and rehabilitation of landforms to ensure structural stability, revegetation success and containment of wastes;
- post-mining land use compatible with surrounding land uses to provide environmental and community benefits.

As discussed in section 2.2, topsoil was stripped from new areas in advance of the Ayredale South and Roxburgh highwalls. Topsoil was recovered using excavators, dozers and trucks or scrapers, and either placed directly onto reshaped areas or stockpiled. Consistent with previous years, the average depth of soil varied depending on the topography and local conditions, with between zero to 300 millimetres of topsoil recovered during stripping.

Topsoil management at Mt Arthur Coal focuses on maintaining the value of the topsoil resource as a growth medium, with the following activities undertaken during the reporting period:

- maintaining a storage height of generally 3 metres or less, consistent with the mining operations plan, to minimise anaerobic conditions within topsoil stockpiles;
- treating topsoil stockpiles to manage weeds;
- mulching trees in disturbance areas, following due diligence surveys, to improve organic and nutrient value within the stockpiles.

Prior to topsoil stripping, pre-clearance surveys were undertaken by Mt Arthur Coal's Environment team with support from qualified ecologists. The team also supervised and inspected potential habitat trees immediately prior to clearing and post felling. Hollows with potential habitat value were salvaged and

reinstated for ground refuge or nest boxes, and all possible efforts were taken to ensure trees remained in place for as long as feasible prior to clearing.

During the reporting period, Mt Arthur Coal collected approximately 24 kilograms of seed from native trees and shrubs located in remnant vegetation areas across the site. As discussed in section 3.10.2, Mt Arthur Coal used the seed to propagate tube stock, which was planted along sections of Thomas Mitchell Drive during the reporting period.

During the reporting period Mt Arthur Coal completed 0.7 hectares of rehabilitation on VD1 and approximately 31 hectares of overburden was reshaped VD1, Belmont East and Brown's Lane. These shaped areas and 25 hectares at SD2, which were delayed in the previous reporting period to allow for investigations and modelling of geomorphic principles, will be rehabilitated during the next reporting period. Pasture and tree seed mixes for rehabilitation were reviewed during the reporting period in preparation for seeding during spring.

The rehabilitation plan in Appendix 8 identifies the areas of rehabilitation completed prior to the reporting period, works undertaken during the reporting period and the areas proposed for rehabilitation in the next reporting period, which are consistent with the amended mining operations plan submitted to DT&I in July 2011. Additional information about rehabilitation undertaken during the period can be found in Table 20.

Progressive rehabilitation of shaped overburden areas will continue to occur in line with the areas outlined in the mining operations plan. Large quantities of inert overburden will be imported from nearby locations within the Mt Arthur Coal complex to effectively cap former mining areas at Bayswater No. 2 and Drayton void areas that are susceptible to spontaneous combustion.
Maintenance activities will continue to play a major role in the success of rehabilitation at Mt Arthur Coal. These activities include weed spraying, soil management and feral animal control. A summary of these activities can be found in Table 21.

Wild dog and fox management activities continued on land owned by Mt Arthur Coal during the reporting period with wild dog and fox baiting undertaken during May and June 2012. Results were positive with baits taken from 41 of the 61 baiting locations. As discussed in section 3.7.2 a weed treatment program also continued throughout the reporting period.

The aerial seeding program at Mt Arthur Coal also continued during the reporting period with approximately 96 hectares of exposed overburden not yet ready for final rehabilitation seeded with a pasture mix developed with assistance from a local agronomist. Similar to previous years, the results continued to be encouraging with germination across the area without the need for cultivation or irrigation and in the absence of topsoil.

Table 20: Mt Arthur Coal rehabilitation summary

Domain	Area affected or rehabilitated (ha)		
	Reporting period (Jan 2012 - Jun 2012)	Last Report (Jan 2011 – Dec 2011)	Next report (estimated) (Jul 2012 – Jun 2013)
A: MINE LEASE AREA			
A1 Mine lease area	8,464	8,464	8,464
B: DISTURBED AREAS			
B1 Infrastructure area	394	394	394
B2 Active mining areas	1,079	1,099	1,090
B3 Unshaped waste emplacement	1,386	1,355	1,300
B4 Tailings storage facility	78	78	72
B5 Shaped overburden emplacement	29.4	9.0	14.5
All disturbed areas	3,122.9	2,932.0	3,264.5
C REHABILITATION PROGRESS			
C1 Total Rehabilitated area – except for maintenance	900	920	1,000
D: REHABILITATION ON SLOPES			
D1 10 to 18 degrees	0	19	0
D2 Greater than 18 degrees	0	0	0
E: SURFACE OF REHABILITATED LAND			
E1 Pasture and grasses	664	681	700
E2 Native forests or ecosystems	238	238	300
E3 Plantations and crops	0	0	0
E4 Other	0	0	0

Table 21: Maintenance activities on rehabilitated land

Nature of treatment	Area treated (ha)		Comment, control strategies or treatment
	Reporting period	Next reporting period (estimate)	
Additional erosion control works	1	1	Focus around Saddlers Pit and Belmont
Re-topsoiling	0	0	
Soil treatment	0	60.8	Gypsum and organic material applied to assist rehabilitation program
Pasture management	0	0	No grazing undertaken on rehabilitation and additional fencing required
Reseeding and replanting	10	60.8	4,000 tube stock planted along Thomas Mitchell Drive offset area
Weed Control	100	100	Targeting Galenia, African Boxthorn, St John's Wort and Prickly Pear on rehabilitation and within offset areas
Feral animal control	4,000	4,000	Wild dog and fox baiting across all of Mt Arthur Coal

5.3 Rehabilitation Trials and Research

During the reporting period, Mt Arthur Coal started to implement small scale rehabilitation trials on VD1 to improve the ratio of tree to pasture cover. Approximately 2.5 hectares was scalped, disced with a tractor, sprayed to control weeds and seeded with tree seed via an air seeder. These trials will occur in a staged approach and continue over the next reporting period.

Further trials during the next reporting period may be undertaken to develop a research program aimed at improving the understanding and application of rehabilitation techniques used in the Hunter Valley. This program of research has been enhanced by the establishment of a collaborative research group during the reporting period, comprising representatives of various mining companies in the Upper Hunter. The focus of the group is to assess synergies and knowledge sharing in areas particularly in the management and rehabilitation of key plant communities and species, together with techniques for habitat restoration for key fauna.

Furthermore research will continue to be undertaken as part of the rehabilitation management plan into the feasibility of using more natural landform designs for areas impacted by mining.

5.4 Further Development of the Final Rehabilitation Plan

The rehabilitation outcomes for Mt Arthur Coal are described in the rehabilitation strategy. Whilst the rehabilitation strategy provides the overarching concepts for decision making in terms of landscape and land use for Mt Arthur Coal, the B&RMP and other relevant management plans provide specific management actions.

The rehabilitation strategy was developed to address Schedule 3, Condition 42 of the Mt Arthur Coal Mine Open Cut Consolidation Project Approval. The strategy which is a component of the EMS was submitted to DoPI for approval in October 2011.

The objectives of the rehabilitation strategy are to:

- provide a structure which underpins the planning and assessment process for mine closure that is able to be readily revised and updated; and
- provide a transparent and overarching framework that can be utilised during current and future stakeholder engagement programs.

The B&RMP was prepared to address Schedule 3, Conditions 40 and 44 of the Mt Arthur Coal Mine Open Cut Consolidation Project Approval. The B&RMP was submitted to DoPI for approval in March 2012 and has been developed to ensure that the post mining landscape at the site and associated offset areas provide for:

- pastoral, recreation and/or wildlife habitat opportunities with due consideration to visual amenity aligned to the surrounding landscapes;
- successful design and rehabilitation of landforms to ensure structural stability, revegetation success and containment of wastes;
- post-mining land use which is compatible with surrounding land uses to provide suitable environmental and community benefits;
- reestablishment of significant and/or threatened plant communities, including:
    - Upper Hunter White Box – Ironbark Grassy Woodland;
    - Central Hunter Box – Ironbark Woodland;
    - Central Hunter Ironbark – Spotted Gum Grey-Gum Box Forest;
    - Narrabeen Footslopes Slaty Box Woodland;
    - Hunter Floodplain Red Gum Woodland Complex;
- reestablishment of significant and/or threatened plant species or populations, including:
    - Lobed Blue-Grass (*Bothriochloa biloba*);
    - Tiger Orchid (*Cymbidium canaliculatum*);
    - Weeping Myall (*Acacia pendula*);
- reestablishment of habitat for significant and/or threatened fauna species.

The B&RMP defines the performance or completion criteria, performance measures and indicators as they relate to the land management and rehabilitation program.

6 Activities Proposed in the Next AEMR Period

Mt Arthur Coal is committed to delivering a high standard of environmental and social performance into the future and has established targets for the next reporting period. These targets will be closely monitored and an update on the status of each will be reported in the next AEMR.

Due to the realignment of the AEMR reporting period to the financial year, this interim AEMR was developed for the period 1 January 2012 to 30 June 2012. The 2012 targets set in 2011 were proposed on the basis of them being implemented across the complete 2012 calendar year period. The targets scheduled for completion during the period 1 July 2012 to 31 December 2012, together with any target not yet achieved during this interim AEMR reporting period will be carried forward to the next reporting period. Table 22 outlines a progress summary of Mt Arthur Coal's performance against targets set for the 2012 year.

Mt Arthur Coal has established the following targets for the next reporting period:

- in consultation with DoPI, surrender of the Bayswater No. 3 development consent DA210/93;
- review and update the site predictive water balance model simulation tool;
- investigate the feasibility of dust reduction projects identified in the PRP report;
- continue investigating a rehabilitation trial on landform design;
- install a real-time noise monitor to assist in the management of noise impacts at nearby properties;
- install a real-time surface water monitoring station downstream of Mt Arthur Coal in Saddlers Creek, but upstream from any water off-takes;
- complete and lodge an environmental assessment for the Mt Arthur Coal Modification Project;
- commence a review of the effectiveness of the complaints handling process;
- employ at least eight first-year apprentices from the local community.

Table 22: Mt Arthur Coal's performance against targets set in 2011

Target	Status	Performance
Review and update the site predictive water balance model simulation tool	Commenced	Expected to be completed in the next reporting period
Investigate the feasibility of dust reduction projects identified in the PRP report	Commenced	Project owners have been assigned to each project. Implementation timeframes range from March 2013 through to December 2013
Continue investigating a rehabilitation trial on landform design	Commenced	Conceptual design received. Detailed design to be progressed
Install a new real-time air quality monitor to the north of the site for dust management purposes	Completed	Installed on 27 June 2012
Install a real-time noise monitor to assist in the management of noise impacts at nearby properties	Not yet commenced	Expected to be completed in the next reporting period

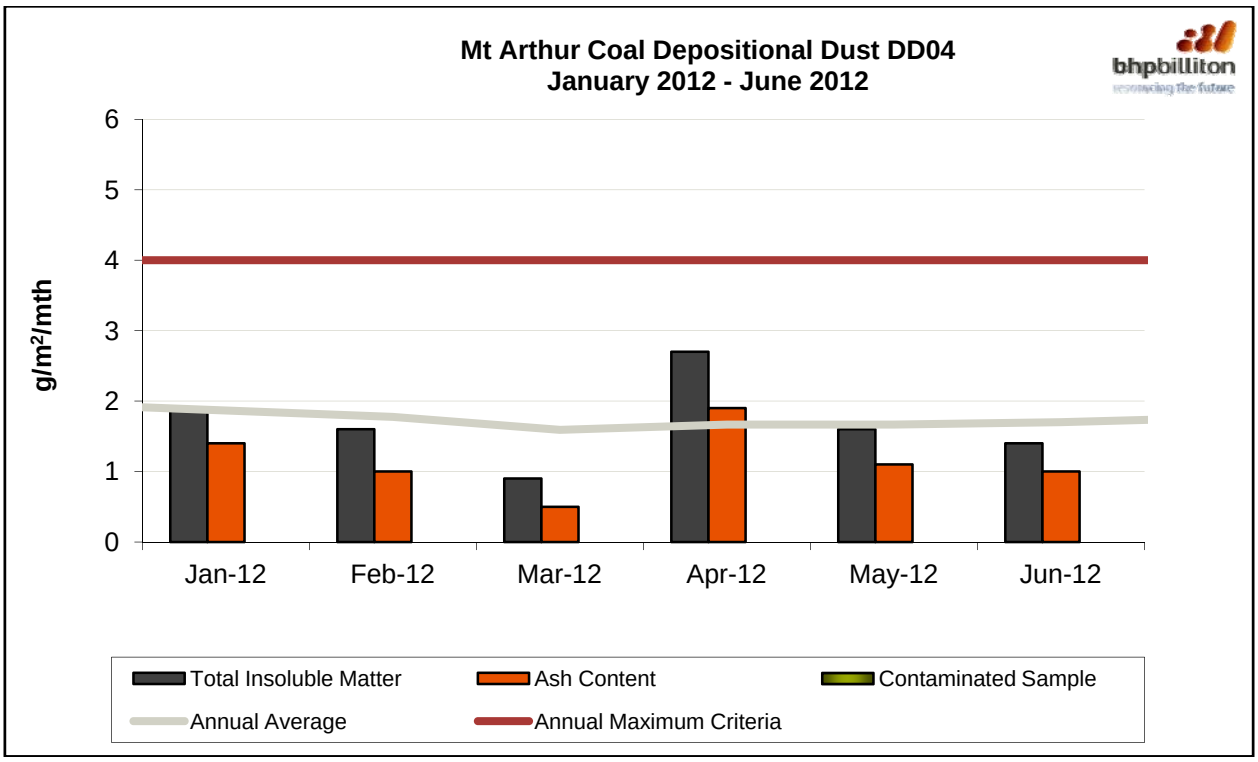
Target	Status	Performance
Install a real-time surface water monitoring station downstream of My Arthur Coal in Saddlers Creek, but upstream from any water off-takes	Commenced	The site and equipment has been selected for the real-time surface water monitoring station. Purchase and installation is currently being organised to align with budget during the first half of 2012
Complete and lodge an environmental assessment for the Mt Arthur Coal Modification Project with DoPI for approval	Commenced	The project description and justification was submitted to DoPI in February 2012. A comprehensive stakeholder engagement program commenced in February 2012. Specialist environmental studies commenced during the reporting period and Director-Generals Requirements were issued by DoPI in May 2012. During the next reporting period the results of the specialist environment studies will be completed and the environmental assessment for the project will be lodged.
Commence a review of the effectiveness of the complaints handling process	Commenced	Update to be provided in the next reporting period.
Employ at least eight first year apprentices from the local community	Completed	Mt Arthur Coal welcomed 11 new apprentice electricians and plant mechanics to its operations during the reporting period. The new recruits were selected from Muswellbrook, Denman, Singleton and Scone as part of Mt Arthur Coal's commitment to employing and training local people for local jobs.

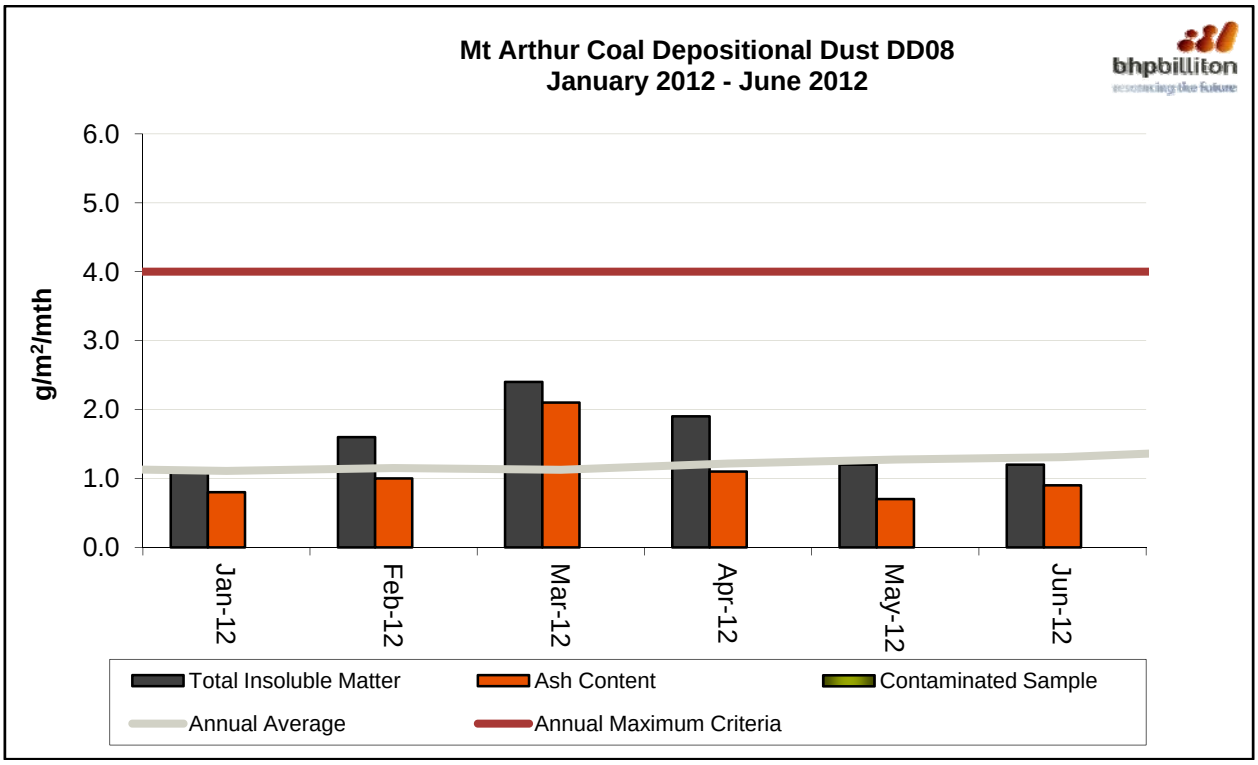
7 Acronyms

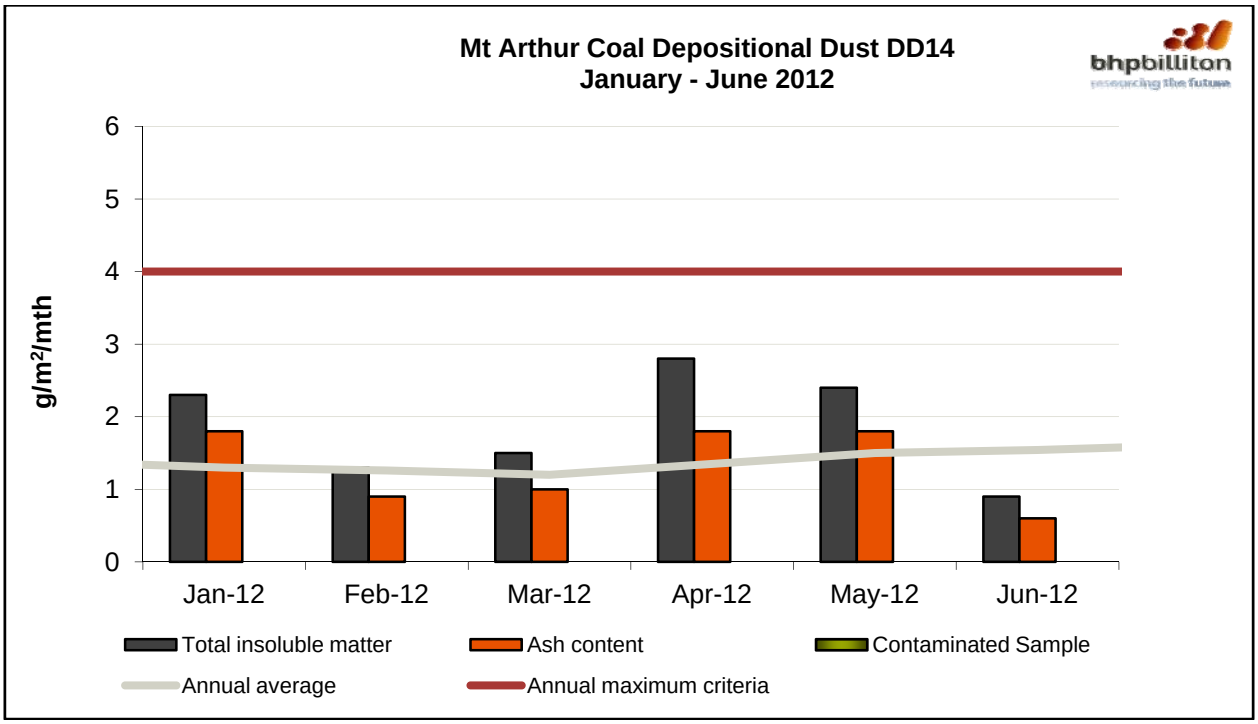
AEMR	Annual Environmental Management Report
bcm	Bank cubic metres
Box-Gum Grassy Woodland	White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland
B&RMP	Biodiversity and Rehabilitation Management Plan
CCC	Mt Arthur Coal Mine Community Consultative Committee
CCL	Consolidated coal lease
CHPP	Coal handling preparation plant
CL	Coal lease
dB	Decibels
DoPI	NSW Department of Planning and Infrastructure
DT&I	NSW Department of Trade and Investment
EA	Environmental assessment titled *Mt Arthur Coal Consolidation Project Environmental Assessment* (6 volumes), dated November 2009, including the response to submissions
EC	Electrical conductivity
EEO	Energy efficiency opportunities
EL	Exploration licence
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
EMS	Environmental management system
FY	Financial year
HVAS	High volume air sampler
ISO	International Standards Organisation
LED	Light-emitting diode
LA_{eq} (15min)	Average noise energy over a 15 minute period
m	Metre
mg/L	Milligrams per litre
ML	Megalitre
mm	Millimetres
mm/s	Millimetres per second
MOP	Mining operations plan
MPL	Mining purpose lease

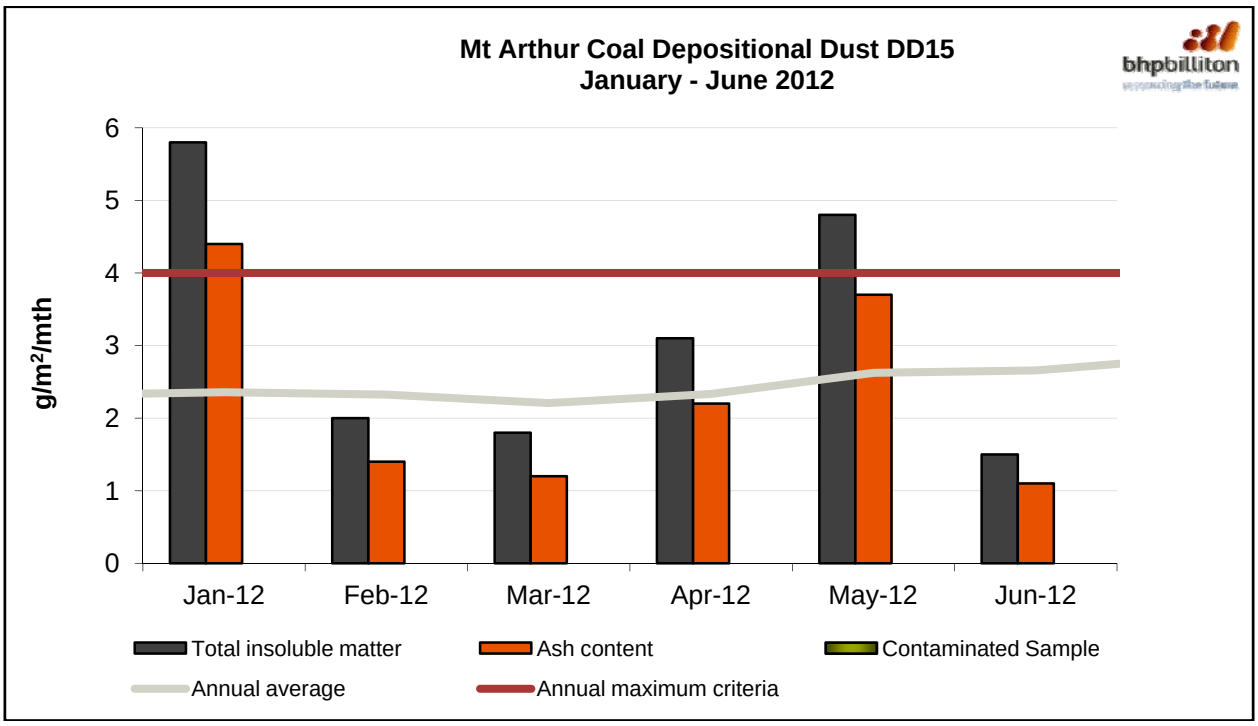
MSC	Muswellbrook Shire Council
m^2	Square metres
m^3	Cubic metres
NATA	National Association of Testing Authorities
NGER	*National Greenhouse and Energy Reporting Act 2007*
NGO	Non-government organisation
NOW	NSW Office of Water
OEH	Office of Environment and Heritage
pH	Potential hydrogen
PRP	Pollution Reduction Program
SEWPAC	Commonwealth Department of Sustainability, Environment, Water, Population and Communities
SMS	Short message service
TEOM	Tapered element oscillating microbalance samplers
TSP	Total suspended particles
TSS	Total suspended solids
µS/cm	Microsiemens per centimetre
$\mu g/m^3$	Micrograms per cubic metre
VPA	Voluntary planning agreement
^oC	Degrees Celsius

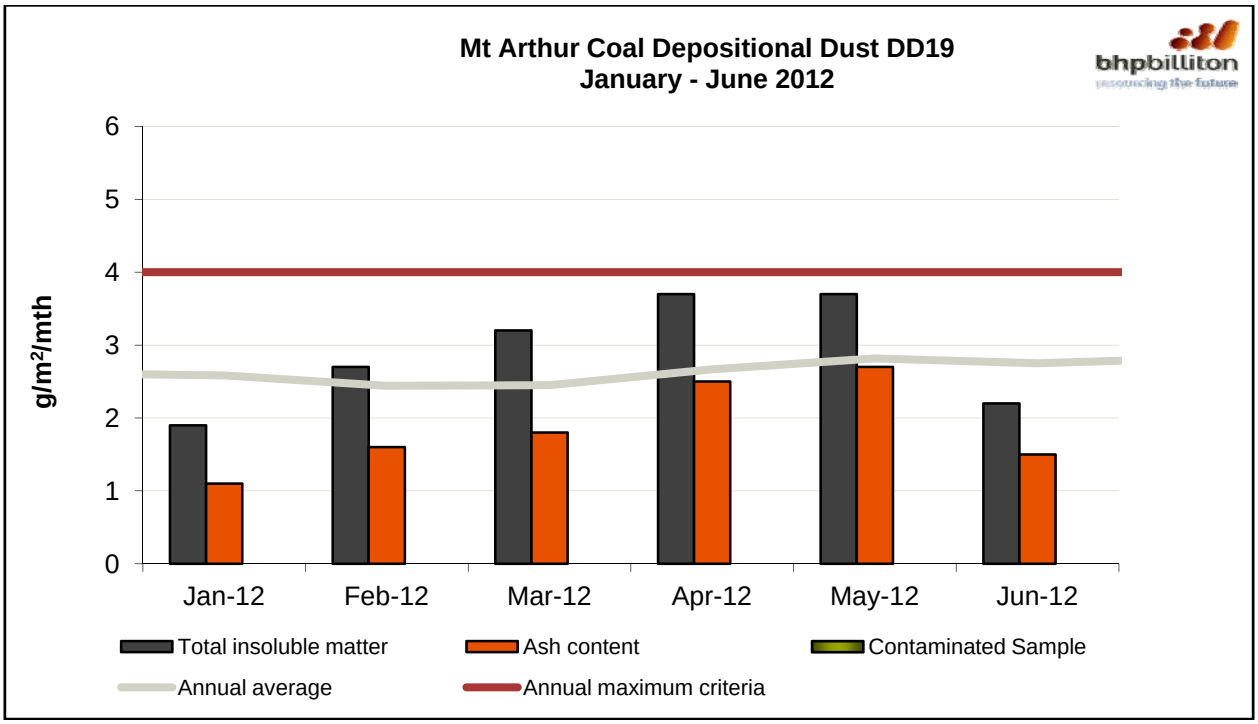
Appendix 1 - Dust Deposition Data

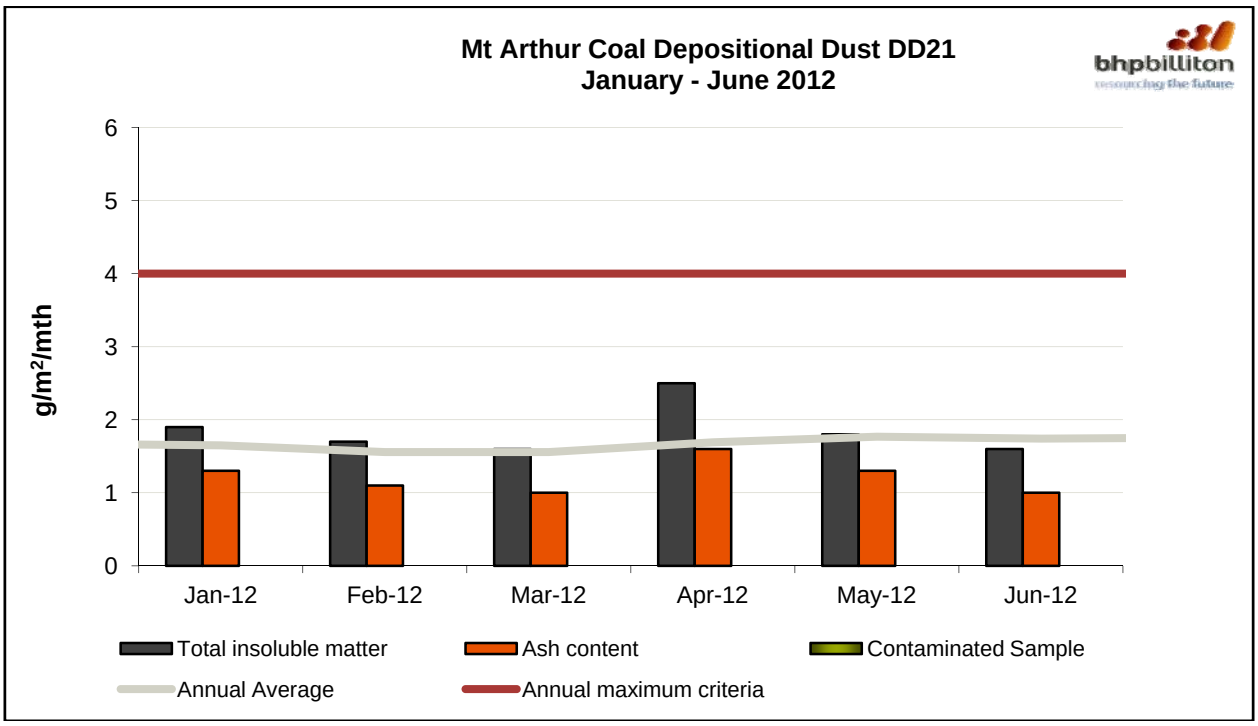




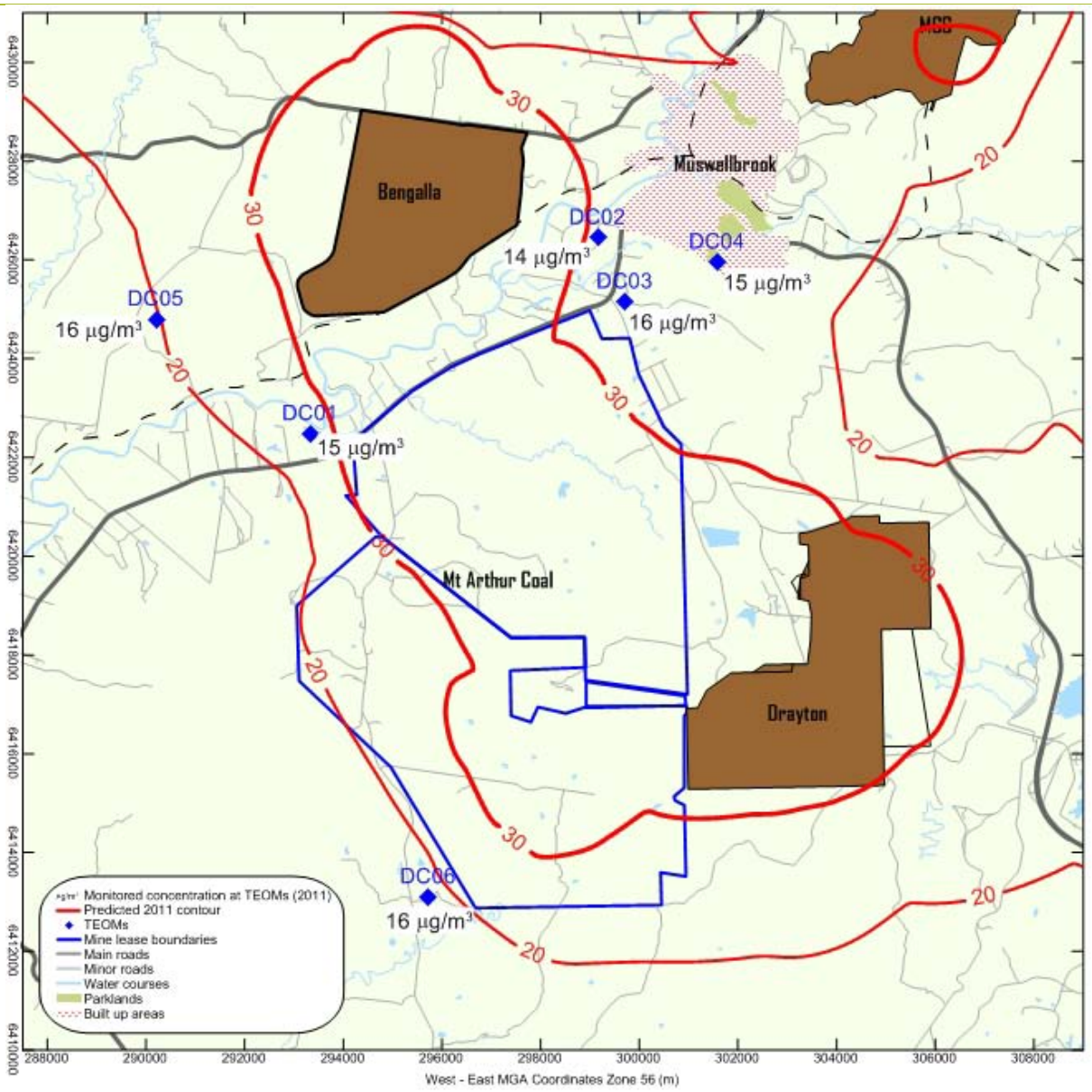

Mt Arthur Coal Depositional Dust DD14
January - June 2012
bhpbilliton
g/m²/mth
0
1
2
3
4
5
6
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Total insoluble matter
Ash content
Contaminated Sample
Annual average
Annual maximum criteria


Mt Arthur Coal Depositional Dust DD15
January - June 2012
bhpbilliton
g/m²/mth
0
1
2
3
4
5
6
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Total insoluble matter
Ash content
Contaminated Sample
Annual average
Annual maximum criteria


Mt Arthur Coal Depositional Dust DD19
January - June 2012
bhpbilliton
g/m²/mth
0
1
2
3
4
5
6
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Total insoluble matter
Ash content
Contaminated Sample
Annual average
Annual maximum criteria

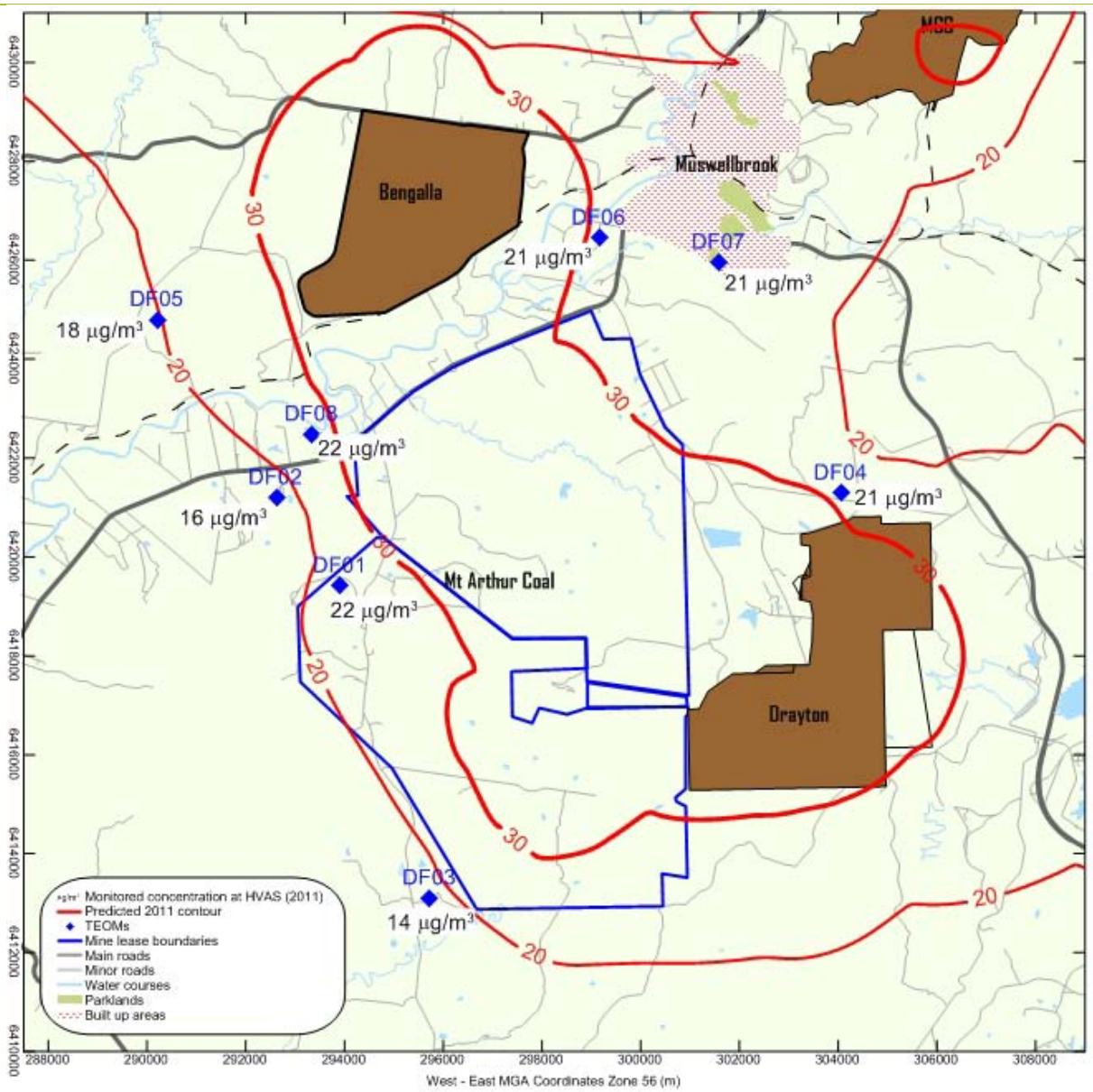

Mt Arthur Coal Depositional Dust DD21
January - June 2012
bhpbilliton
g/m²/mth
0
1
2
3
4
5
6
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Total insoluble matter
Ash content
Contaminated Sample
Annual Average
Annual maximum criteria

Appendix 2 - Comparison of Dust Data with Environmental Assessment Predictions



Species: PM_{10}	**Averaging time:** Annual	**Percentile:** Maximum	**Scenario:** MAC 2011 Project and other sources	**Location:** MAC Mine
Model used: ISCMOD	**Units:** $\mu g/m^3$	**Assessment criteria:** 30	**Met data:** Macleans Hill 2007-2008	**Plot:** R Kan

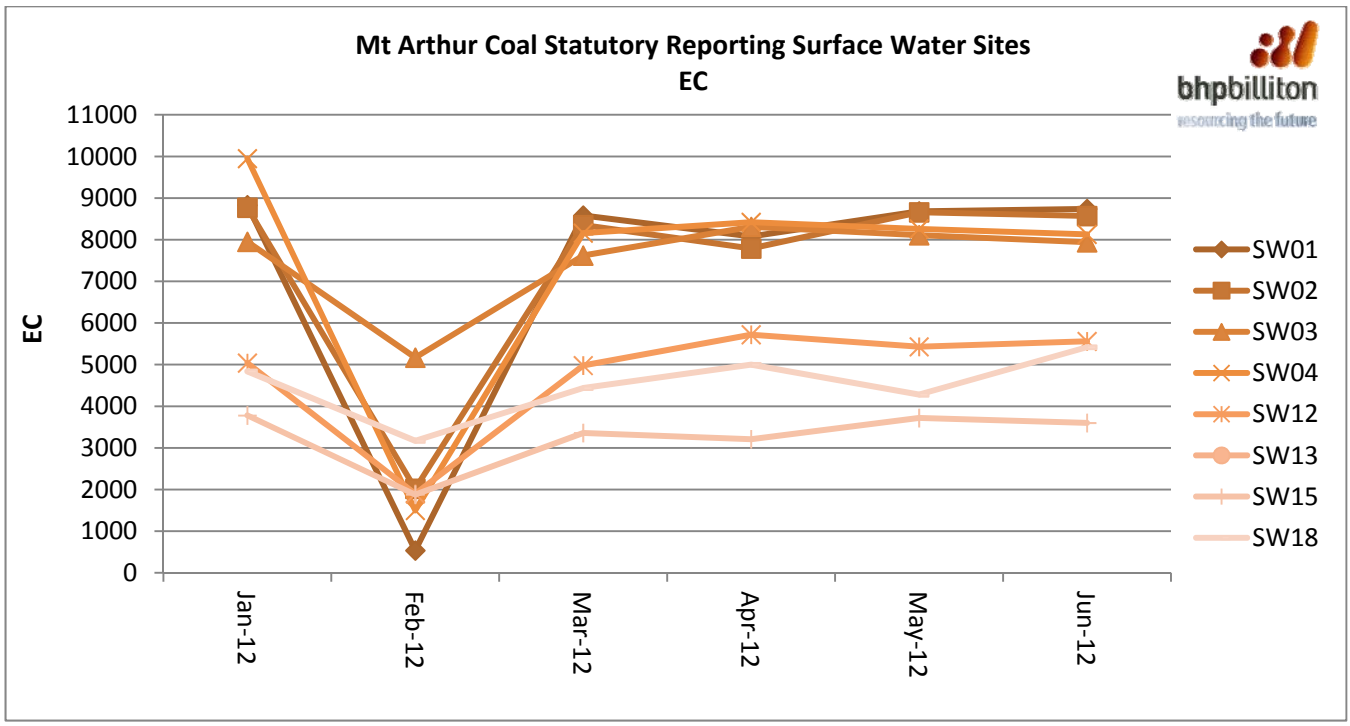
Figure 1: Predicted annual average PM_{10} concentrations due to emissions from the Project and other sources – TEOMs

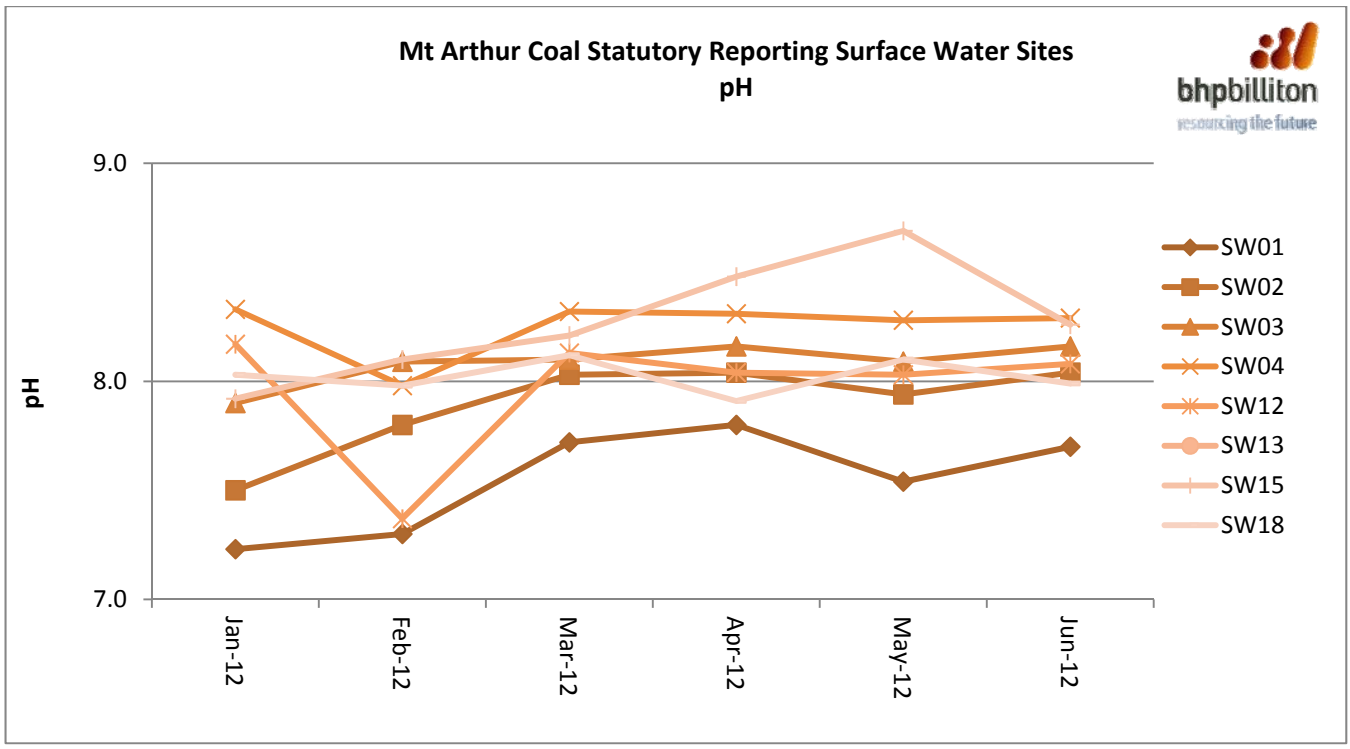


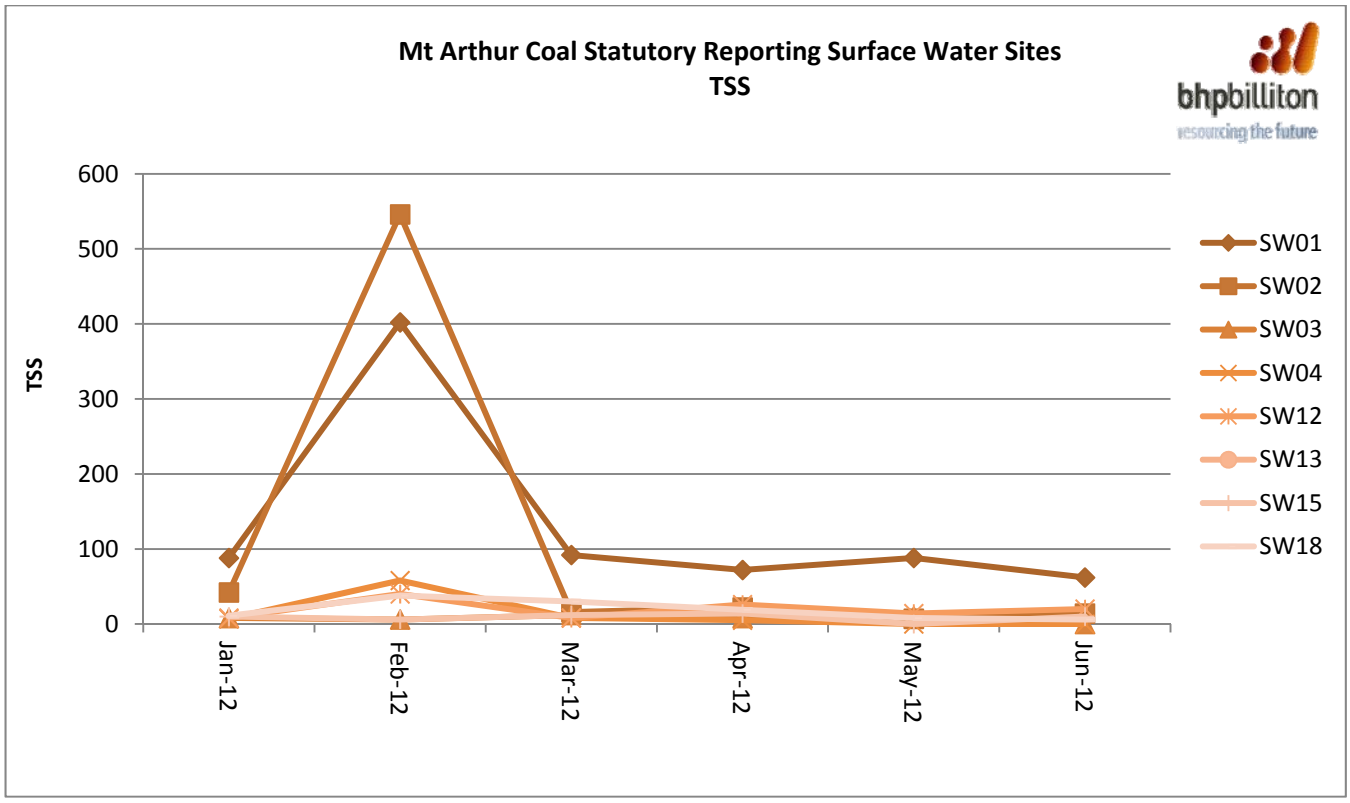
Species: PM_{10}	**Averaging time:** Annual	**Percentile:** Maximum	**Scenario:** MAC 2011 Project and other sources	**Location:** MAC Mine
Model used: ISCMOD	**Units:** µg/m³	**Assessment criteria:** 30	**Met data:** Macleans Hill 2007-2008	**Plot:** R Kan

Figure 2: Predicted annual average PM_{10} concentrations due to emissions from the project and other sources – HVAS

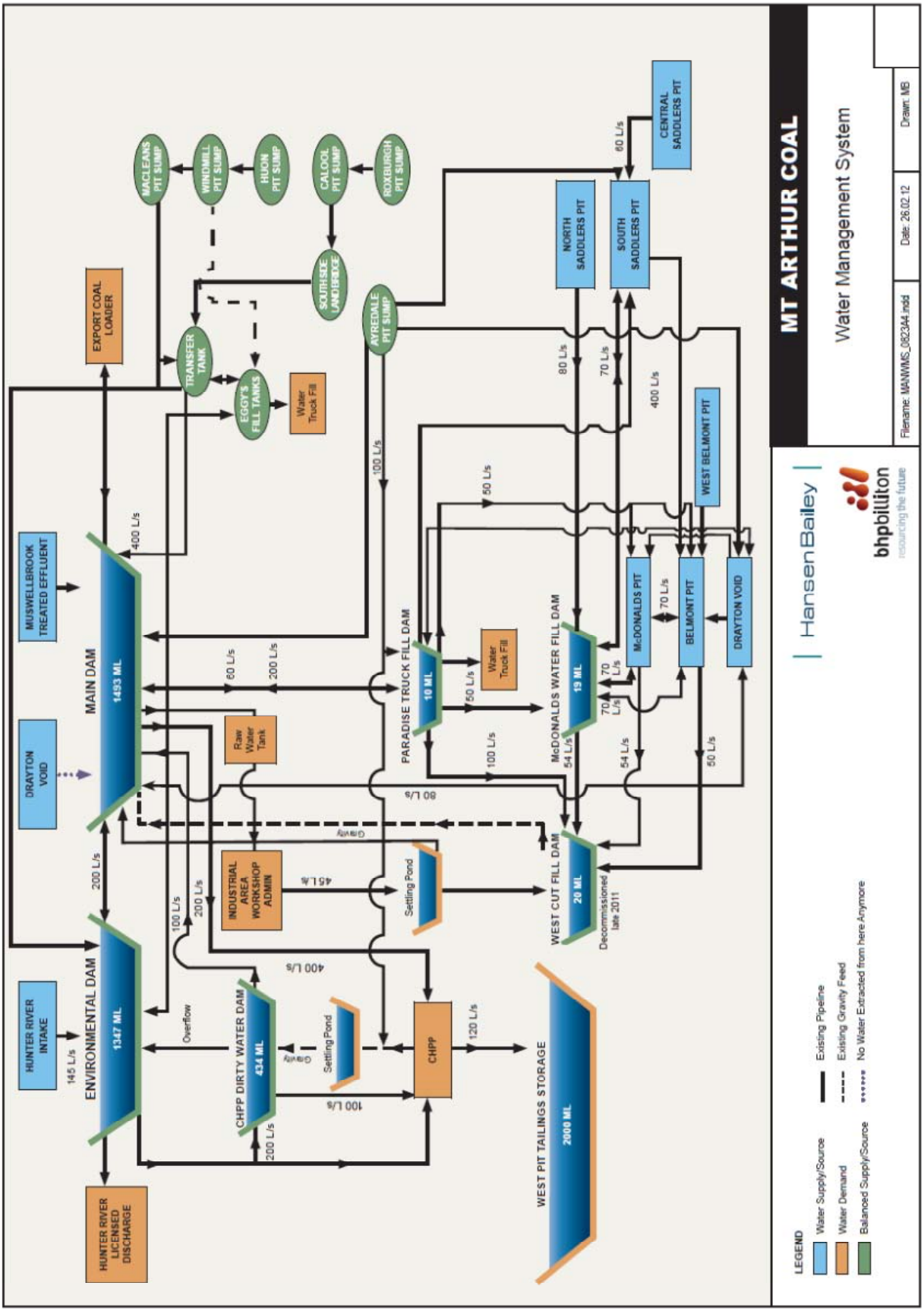
Appendix 3 - Surface Water Monitoring Results



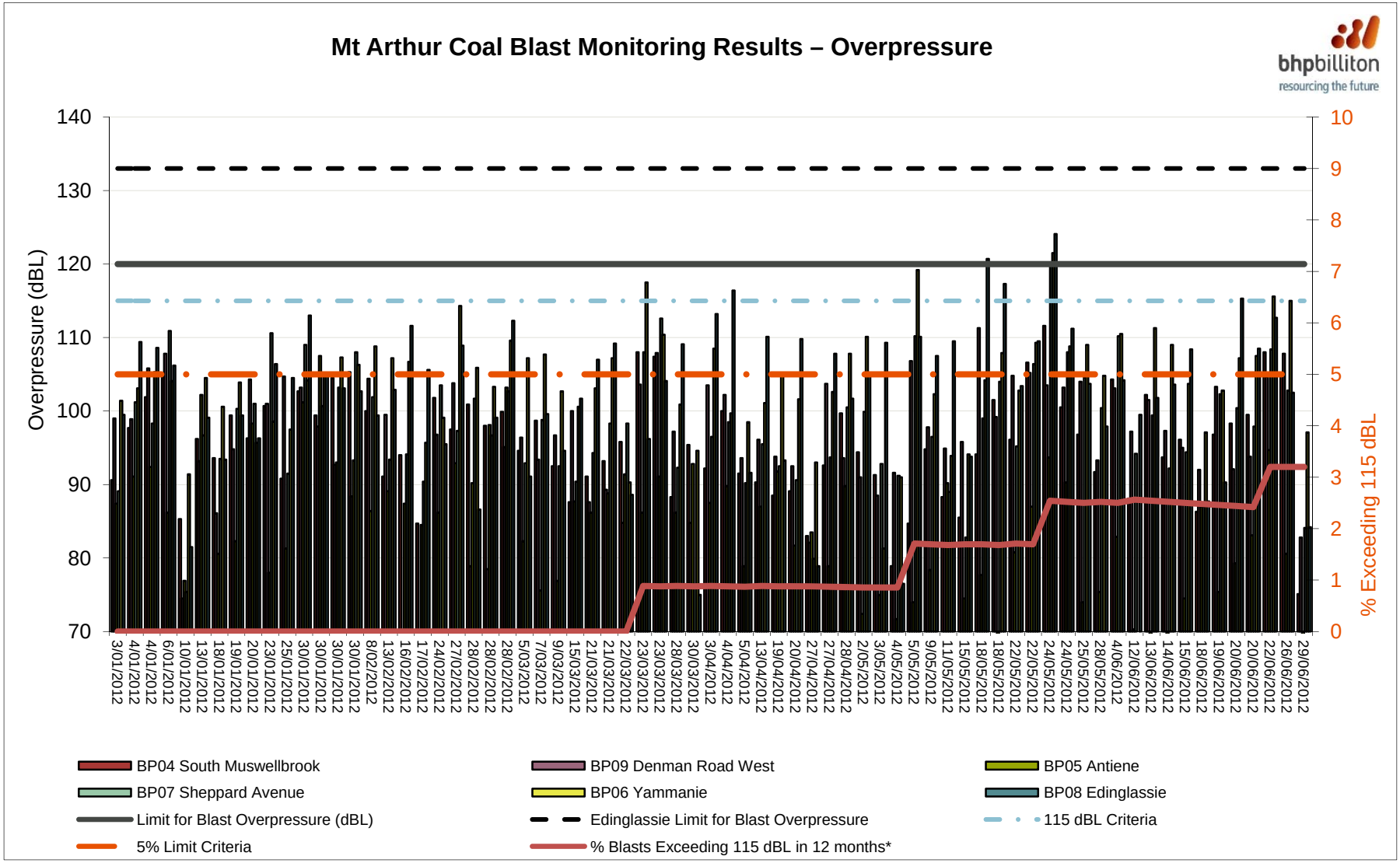


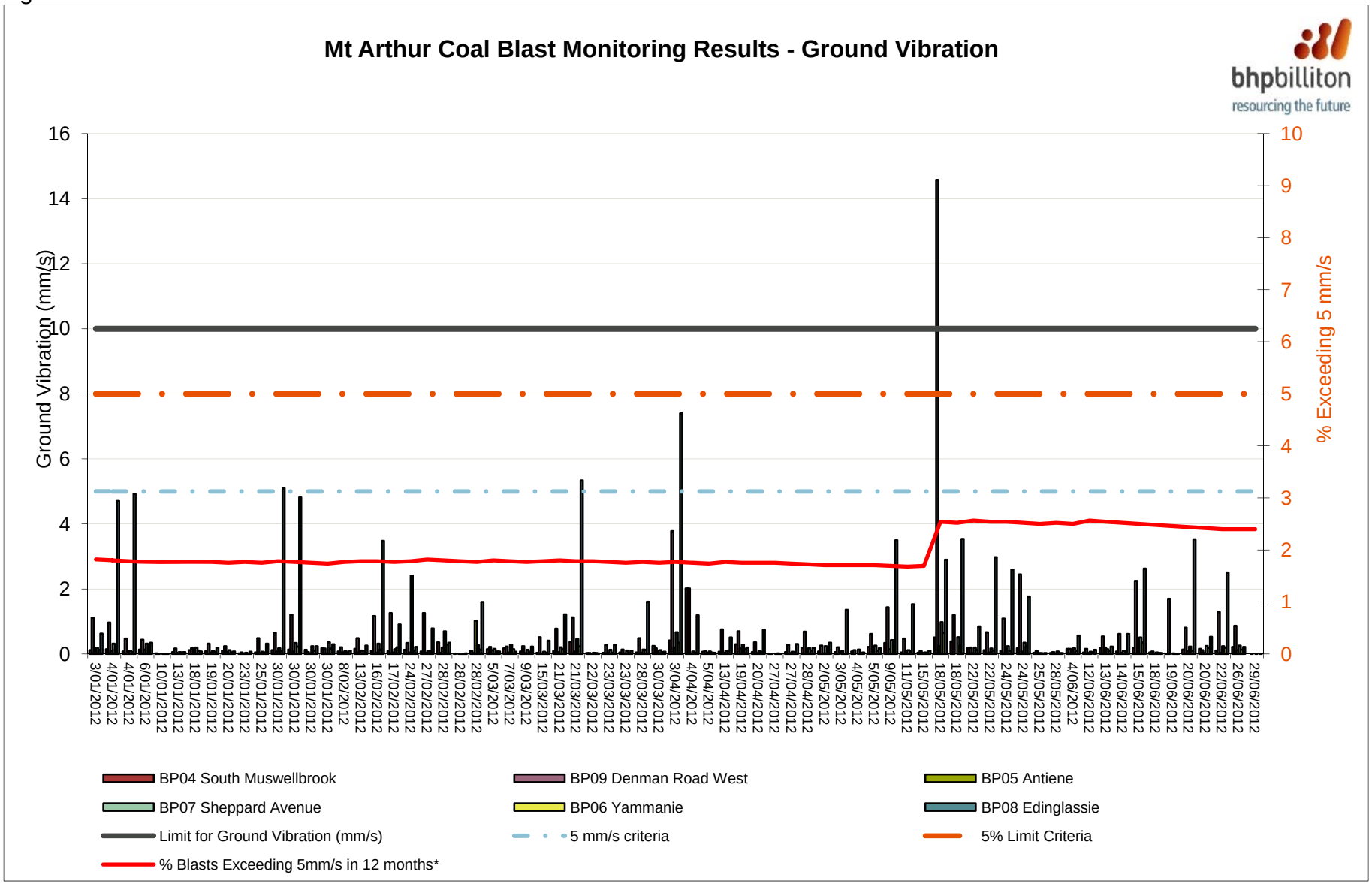

Mt Arthur Coal Statutory Reporting Surface Water Sites
TSS
bhpbilliton
resourcing the future
TSS
600
500
400
300
200
100
0
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
SW01
SW02
SW03
SW04
SW12
SW13
SW15
SW18

Appendix 4 - Overview of Surface Water Management System



Appendix 5 - Blast Monitoring Results




Mt Arthur Coal Blast Monitoring Results - Ground Vibration
bhpbilliton
resourcing the future
Ground Vibration (mm/s)
% Exceeding 5 mm/s
0
2
4
6
8
10
12
14
16
0
1
2
3
4
5
6
7
8
9
10
30/01/2012
4/01/2012
4/01/2012
6/01/2012
10/01/2012
13/01/2012
18/01/2012
19/01/2012
20/01/2012
23/01/2012
25/01/2012
30/01/2012
30/01/2012
30/01/2012
30/01/2012
8/02/2012
13/02/2012
16/02/2012
17/02/2012
24/02/2012
27/02/2012
28/02/2012
28/02/2012
28/02/2012
5/03/2012
7/03/2012
9/03/2012
15/03/2012
21/03/2012
21/03/2012
22/03/2012
23/03/2012
23/03/2012
28/03/2012
30/03/2012
3/04/2012
4/04/2012
5/04/2012
13/04/2012
19/04/2012
20/04/2012
27/04/2012
27/04/2012
28/04/2012
2/05/2012
3/05/2012
4/05/2012
5/05/2012
9/05/2012
11/05/2012
15/05/2012
18/05/2012
18/05/2012
22/05/2012
22/05/2012
24/05/2012
24/05/2012
25/05/2012
28/05/2012
4/06/2012
12/06/2012
13/06/2012
14/06/2012
15/06/2012
18/06/2012
19/06/2012
20/06/2012
20/06/2012
22/06/2012
26/06/2012
29/06/2012
BP04 South Muswellbrook
BP09 Denman Road West
BP05 Antiene
BP07 Sheppard Avenue
BP06 Yammanie
BP08 Edinglassie
Limit for Ground Vibration (mm/s)
5 mm/s criteria
5% Limit Criteria
% Blasts Exceeding 5mm/s in 12 months*

Appendix 6 - Meteorological Data

	Temperature 2m (C)			Temperature 10m (C)			Humidity (%)		
	Min	Average	Max	Min	Average	Max	Min	Average	Max
January	10.2	20.2	34.3	12.6	22.1	34.6	17.7	66.0	93.7
February	ND	ND	ND	14.0	21.0	30.7	27.9	75.0	94.1
March	ND	ND	ND	10.4	19.7	30.6	28.7	72.2	94.3
April	ND	ND	ND	7.8	17.5	29.4	27.4	70.9	94.8
May	ND	ND	ND	1.9	13.1	26.4	20.0	64.0	95.2
June	ND	ND	ND	1.3	11.4	20.3	33.1	75.6	95.8

	Windspeed (m/s)			Sigma Theta			Solar Radiation (W/m2)		
	Min	Average	Max	Min	Average	Max	Min	Average	Max
January	ND	ND	ND	ND	ND	ND	0.0	356.8	1932.9
February	0.0	2.8	17.7	0.0	19.7	98.7	0.0	310.1	1747.3
March	0.0	3.4	12.2	4.3	17.6	97.0	0.0	301.6	1639.6
April	0.0	2.5	11.8	4.4	22.0	100.7	0.0	249.9	1303.5
May	0.0	2.1	11.1	2.3	40.0	102.8	0.0	224.3	1193.6
June	0.0	3.0	10.0	0.9	25.3	103.0	0.0	147.4	1006.5

	Rainfall mm	No. of days rain >1mm
January	61.0	8
February	108.4	13
March	85.4	6
April	35.4	4
May	19.2	5
June	52.4	8

Appendix 7 - Complaints Register January to June 2012

Date and Time	From	Issue	Summary
4/01/2012 11:15:00 AM	Denman Road	Blast Vibration	A Denman Road resident called the Community Response Line to register a complaint about blast vibration that was felt at their residence at approximately 11.11 am. The Environmental Manager asked the complainant if they would like further information on the blast. This offer was declined. All blast monitoring results were within statutory limits.
4/01/2012 11:20:00 AM	Denman Road	Blast Vibration	A Denman Road resident called the Community Response Line to register a complaint about a second blast vibration that was felt at their residence at approximately 11.19 am. The Environmental Manager confirmed that Mt Arthur Coal had blasted at this time and asked the complainant if they would like further information on the blast. This offer was declined. All blast monitoring results were within statutory limits.
16/01/2012 3:30:00 AM	Roxburgh Road	Operational Noise	A complaint was received from a near-neighbour regarding a low-frequency pulsating noise that could be heard at their residence. The complainant requested not to be contacted that night and confirmed that they had phoned both Mt Arthur Coal and a neighbouring mine as they were unable to ascertain the direction or location that the noise was coming from. The Community Relations Coordinator returned the complainant's call the following day and confirmed that low level operational noise could was audible at the Denman Road West monitor throughout periods of the night, however, the noises were predominantly truck engine and reverse beeping sounds, not low frequency activities that were identified by the complainant as being the issue. The Community Relations Coordinator confirmed that a report on the results from recent monitoring activities at their residence was currently being reviewed internally and that Mt Arthur Coal would be in contact in the coming weeks to discuss these. High winds were recorded throughout the night of concern from a south east direction. At the time of the complaint weather conditions were suitable for operations at 17.3 degrees, no rain or temperature inversions, 85 per cent humidity and a wind speed of 3.1 m/s.
18/01/2012 4:30:00 PM	Denman Road	General Dust	An anonymous complaint was received by the Department of Planning and Infrastructure in relation to dust from Mt Arthur Coal in the vicinity of Denman Road. A Department of Planning and Infrastructure compliance officer immediately contacted the Mt Arthur Coal Environment and Community Manager to report the complaint. The Environment and Community Manager confirmed that dust levels at all real-time PM10 dust monitors were below statutory limits. Six water carts were also operating with three of these focused in the northern end of the pit. Earlier in the afternoon trucks had also been stopped on a ramp in the northern end of the pit due to dust levels until a water cart was able to apply dust suppressant in this area. Upon receiving the complaint the Environment and Community Manager requested an Open Cut Examiner to immediately

			inspect the northern end of the pit and modify operations if necessary to reduce dust levels. Wind at the time of the complaint was from the south east at 3-4 metres per second.
19/01/2012 2:53:00 AM	Roxburgh Road	Operational Noise	A complaint was received from a Roxburgh Road resident regarding a constant pulsating noise that was preventing the complainant from sleeping. The complainant noted that they could not determine the direction of the noise. The complainant requested not to be called back that night. The Environmental Coordinator called the overburden Open Cut Examiner immediately to discuss current operations, but was unable to determine the source of the noise. The Environmental Coordinator noted that no high noise level alarms had been received from the real-time noise monitoring system. The Environmental Coordinator called the complainant back later that day and advised that monitoring results were below regulatory limits. Temperature was approximately 19.8 degrees Celsius at the time of the complaint with no rain or temperature inversion, 89.5 per cent humidity and a wind speed of 0.87m/s from the north east.
22/01/2012 12:23:00 AM	Roxburgh Road	Operational Noise	A community member contacted the Community Response Line to register a complaint regarding a constant pulsating noise that was preventing the complainant from sleeping. The complainant requested not to be called back that night. The Environmental Coordinator called the overburden Open Cut Examiner at the time of the complaint to discuss current operations, however, the source of the noise could not be determined. The Environmental Coordinator noted that no high noise level alarms had been received from the real-time monitoring system. The Environmental Coordinator attempted to contact the complainant on the following Monday, Tuesday and Wednesday with no success. The Environmental Coordinator contacted the complainant on the Friday and advised that monitoring results were below regulatory limits at the nearest noise monitor. Temperature was approximately 19.6 degrees Celsius, with no rain, 83 per cent humidity and a wind speed of 4.25 m/s from the south east.
27/01/2012 11:00:00 PM	Roxburgh Road	Operational Noise	A complainant called the Community Response Line to report hearing a continuous pulsating noise coming from a mine site. The complainant advised they were not sure if it was coming from Mt Arthur Coal or a neighbouring mine, but that they had also rung the neighbouring mine to advise of the same issue. The Community Coordinator called the Open Cut Examiner at the time of the complaint but the source of the noise could not be determined. Noise levels on the night of the complaint were below statutory limits a the closest monitor.
30/01/2012 11:39:00 AM	Denman Road	Blast Vibration	A Denman Road resident called the Community Response Line to register a complaint about blast vibration. The complainant noted that the vibration from the blast could not be felt as much as some previous blasts, but that it could be felt at their residence. The Environmental Superintendent confirmed that Mt Arthur Coal had recently blasted. A copy of the monitoring results from the blast monitor at the complainant's residence was emailed to the complainant. The

			Environmental Advisor also called the complainant the following day to discuss their concerns further. The Environmental Advisor confirmed that results from the two blasts that were fired in succession at the time concerned recorded results below statutory limits at the temporary blast monitor installed at the resident's property. The likelihood that blast vibration would continue to be felt at the resident's property while mining was in close proximity was also discussed, as was Mt Arthur Coal's commitment to maintain overpressure and vibration results below statutory limits.
16/02/2012 12:30:00 PM	Denman Road	Blast Vibration	A complainant phoned the community response line to report blast vibration that they felt at their residence. The Community Relations Coordinator confirmed that a blast had been undertaken by Mt Arthur Coal and asked if the complainant would like the blast monitoring results to be confirmed. The complainant declined the offer. Weather conditions were suitable for blasting with an easterly wind direction of 1.7 m/s and no rainfall. Blast results were below statutory limits, including at the Yammanie monitor located closest to the complainant's residence, which recorded 0.14 mm/s ground vibration and 106.67 dbL overpressure.
16/02/2012 12:45:00 PM	Roxburgh Road	Blast Fume	A complainant phoned the community response line to report blast fume that they witnessed from their residence following a blast undertaken at Mt Arthur Coal. The resident reported that they saw a large amount of fume and were concerned that it would travel off-site. The Community Relations Coordinator confirmed that a blast had been undertaken by Mt Arthur Coal and asked if the complainant would like a member of the Environment and Community team to phone them back once blast details were confirmed and blast monitoring results were available. The complainant declined the offer. Following the blast, the Environmental Superintendent and Environmental Coordinator travelled along Thomas Mitchell Drive and Denman Road to inspect blast fume. The Environmental Superintendent and Environmental Coordinator confirmed blast fume was evident, but did not leave the site. Blast results were below statutory limits, including at the Denman Road West monitor, located closest to the complainant's residence, which recorded 1.17 mm/s ground vibration and 68.48 dbL overpressure. Weather conditions were suitable for blasting with an easterly wind direction of 1.7 m/s and no rainfall.
16/02/2012 9:10:00 PM	Roxburgh Road	Lighting	A community complaint was received from a near-neighbour regarding lights that were shining directly from the pit onto their residence. The Community Relations Coordinator immediately contacted the Open Cut Examiner who committed to identifying and rectifying the lights. The Community Relations Coordinator returned the complainant's call to advise them of the actions that were being taken . Forty-five minutes later the Community Relations Coordinator again phoned the Open Cut Examiner who confirmed that one light had been relocated and another two had been repositioned. Weather conditions were suitable for operations with a temperature of 21.6 degrees, south-east wind direction of 4.6 m/s and no rainfall.

17/02/2012 5:25:00 AM	Roxburgh Road	Operational Noise	A complaint was received from a near-neighbour regarding a continuous low-frequency pulsating noise that could be heard at their residence, disturbing their sleep. The complainant noted that they were unsure which mining operation it was coming from but wanted to register the complaint. The Community Relations Coordinator offered to return the complainant's call the following day, once operational activities and monitoring results could be confirmed. The complainant declined this offer. The Community Relations Coordinator immediately phoned the Open Cut Examiner who confirmed that some trucks had been operating up high throughout the night in the centre of the pit. Noise monitoring results were within statutory limits on the night of the complaint. Weather conditions were suitable for operations with a temperature of 14.8 degrees, northerly wind direction of 1.49 m/s and no rainfall.
17/02/2012 8:20:00 PM	Roxburgh Road	Lighting	A complaint was received from a near-neighbour regarding lights that were shining directly into their residence. The complainant also noted that they believed Mt Arthur Coal was using white lighting when it was required to use orange coloured lights. It was later confirmed that Mt Arthur Coal is not required to use only orange coloured lights. The Community Relations Coordinator contacted the Open Cut Examiners immediately who confirmed that all lights that could have been shining towards the property were repositioned or relocated. The Open Cut Examiner also drove around the north western pit perimeter and could not identify any lights shining towards the mine boundary. The Community Relations Coordinator attempted to phone the complainant to ascertain if the lighting issue had been rectified. However, they were unable to reach the complainant that night.
17/02/2012 11:00:00 PM	Roxburgh Road	Operational Noise	A complaint was received from a near-neighbour regarding a continuous low-frequency pulsating noise that could be heard at their residence, disturbing their sleep. The complainant noted that they attempted to identify which mining operation it was coming from and believed it to be Mt Arthur Coal. The Community Relations Coordinator immediately phoned the Open Cut Examiner who committed to moving any trucks that were operating high within the pit, to a lower location. Noise monitoring results were within statutory limits on the night of the complaint. Weather conditions were suitable for operations with a temperature of 20.9 degrees, south westerly wind direction of 1.13 m/s and no rainfall.
18/02/2012 8:50:00 PM	Roxburgh Road	Lighting	A complaint was received from a near-neighbour regarding a light shining directly into their residence. The complainant noted that two problematic lights on the previous nights had been rectified, but one was still an issue. The Community Relations Coordinator contacted the Open Cut Examiner who relocated or repositioned all lights that could potentially shine towards Roxburgh Road. The Open Cut Examiner also drove around the north western perimeter of the site and could not identify any lights shining towards the Denman Road or Roxburgh Road areas. The complainant had declined to be called back that night to confirm that the issue had been addressed. The complainant phoned again at 5 am

			on 19 February 2012 stating that the light had not been rectified. The Community Relations Coordinator phoned the complainant at 7.45 pm on 19 February 2012 and offered for an Open Cut Examiner to attend their residence to identify the problematic light. This offer was declined. That evening two Open Cut Examiners travelled to multiple locations on Roxburgh Road, but they could not identify any lights shining from the mine site.
21/02/2012 9:40:00 PM	Roxburgh Road	Lighting	A resident from Roxburgh Road called the community response line to register a complaint regarding a light shining towards their property. Following the call the Open Cut Examiner drove along Roxburgh Road to identify the lighting plant. As a result, two lights were redirected. The Environmental Coordinator called the complainant the following day and the complainant noted that the offending light was still on that morning. The Environmental Coordinator and the Open Cut Examiner redirected one and turned off two lighting plants that night and contacted the complainant. The complainant confirmed these were not the offending lighting plants and that the offending lighting plant had already been redirected towards the ground and was not shining towards their residence.
26/02/2012 1:32:00 AM	Roxburgh Road	Operational Noise	A complaint was received from a near-neighbour regarding a continuous low-frequency pulsating noise that could be heard at their residence. The complainant noted that they could not accurately identify the direction from which the noise was coming. The Environmental Coordinator advised that the type of noise described by the complainant was likely to be coming from a processing plant. The Environmental Coordinator confirmed that a report detailing noise monitoring previously conducted at the complainant's residence was currently being reviewed and once completed would be provided to the complainant. Immediately following the call, the Environmental Coordinator called an Open Cut Examiner, who drove around the north western boundary of the mine, but could not identify a low-frequency pulsating noise. The Environmental Coordinator also called the coal handling preparation plant control room and confirmed that most equipment was shut down due to maintenance issues. Monitoring results were below statutory limits at the nearest noise monitor. The Environmental Coordinator called the complainant back at a later date and offered to arrange a suitable time for the Environment and Community Manager to visit the complainant at their residence. The complainant declined the offer.
27/02/2012 1:40:00 PM	Antiene	Operational Noise	A complainant sent a fax to report that there was heavy machinery noise audible on the nights of 25 and 26 February 2012. The complainant also reported blasting noise and vibration that they felt at their residence at 12.15 pm on 24 February 2012. The Superintendent Environment contacted the complainant on 28 February 2012 and requested further information on the specific time the machinery noise was experienced in order to assist with the investigation. The resident indicated that the noise was experienced throughout each night. The Superintendent Environment also confirmed that no

			blast occurred at Mt Arthur Coal at the time the complainant had experienced blast vibration. Following an investigation into potential noise generating activities the Superintendent Environment contacted the near-neighbour at 11 am on 1 March 2012 and explained that no assembly and commissioning work was being undertaken in the vicinity of the complainant's residence on the nights of 25 and 26 February 2012. The complainant requested to be telephoned prior to each blast in addition to receiving the weekly blast notifications. The Superintendent Environment updated the blast notification list to ensure that the requested blast notifications are made.
28/02/2012 10:58:00 AM	Denman Road	Blast Vibration	A complainant phoned the community response line to report blast vibration that they felt at their residence. The Superintendent Environment confirmed that a blast had been undertaken by Mt Arthur Coal and asked if the complainant would like blast monitoring results to be provided when available. The complainant declined the offer. Weather conditions were suitable for blasting with a north-westerly wind direction of 5.89 m/s. Blast results were below statutory limits, including at the Yammanie monitor located closest to the complainant's residence which recorded 0.29 mm/s ground vibration and 105.9 dB blast overpressure.
29/02/2012 9:11:00 PM	Roxburgh Road	Lighting	A resident from Roxburgh Road called the community response line to register a complaint regarding a light shining towards their property. The complainant noted that they had called a few days earlier for the same issue and that the issue had been resolved, but the same light was again shining towards their property. The Superintendent Environment called the Open Cut Examiner who drove out to Roxburgh Road immediately to inspect the lights. A number of lights were subsequently redirected. The complainant again contacted the Superintendent Environment during the evening on 1 March 2012, indicating that at approximately 5 am the same lighting plant was observed and the issue had not yet been resolved. Further attempts were made to orient all lights away from the complainant's residence.
1/03/2012 8:24:00 PM	Roxburgh Road	Lighting	A resident called the community response line to register a complaint regarding a light shining towards their property. The Superintendent Environment called an Open Cut Examiner and requested that someone drive out to Roxburgh Road immediately to inspect the lights and redirect the light shining towards this area. The light was identified by the Open Cut Examiner as possibly the light at the machine assembly pad and the light was tilted down. The Superintendent Environment called the complainant at 5.08 pm the following day, but the complainant reported that due to lack of visibility in the early morning of 2 March 2012 due to rain, they were unable to determine if the light was still shining towards their property.

18/03/2012 8:11:00 AM	Roxburgh Road	Operational Noise	A complainant called the community response line to report that a constant low frequency pulsating noise that they had reported previously had worsened. The complainant noted attended noise monitoring had been carried out by Mt Arthur Coal and neighbouring mines on random nights near their residence, and requested that monitoring be carried out on nights when they reported that the noise was worse. Preliminary investigations suggested that this option would be difficult to implement due to the distance required to be travelled by the required independent consultant at short notice. The complainant was informed of this. Unattended noise results were within statutory limits on 16 and 17 March 2012.
24/03/2012 11:20:00 PM	Roxburgh Road	Operational Noise	A complaint was received from a resident along Roxburgh Road regarding low frequency and ongoing mining noise. The complainant expressed ongoing concern regarding noise levels. Previous detailed monitoring has occurred at the residence. No noise exceedances were recorded from unattended monitoring during the night of the complaint and the source of the low frequency noise could not be identified.
26/03/2012 5:10:00 AM	Roxburgh Road	Lighting	A resident called the community response line to register a complaint about lighting. The resident requested not to be called back following the initial phone call. The Open Cut Examiner was contacted immediately to identify the source and a lighting plant was moved.
26/03/2012 12:09:00 PM	Antiene	Train Noise	A complaint was received from a near-neighbour regarding noise that could be heard from their residence on the nights 23 to 25 March 2012. The noise was described as loud with lots of banging. The complainant also noted vibration they had felt as a result of a mine blast at 11.30 am on 26 March 2012. The Environment Coordinator contacted the complainant and confirmed that the vibration was not the result of a blast at Mt Arthur Coal. The Environment Coordinator also discussed the noise which the complainant believed was associated with activities of train movements or the coal handling facility. The Community Relations Coordinator contacted the Coal Logistics Coordinator who confirmed that Mt Arthur Coal loaded 20 trains between the 23 to 25 March 2012, of which only eight were loaded during the night. The Coal Logistics Coordinator also reviewed shift logs and confirmed that no issues were referenced over the weekend that could have caused banging noises. The Community Relations Coordinator relayed this information back to the complainant on 28 March 2012.

26/03/2012 7:49:00 PM	Roxburgh Road	Lighting	A complaint was received from a resident regarding a single light shining onto their residence. The complainant also discussed previous correspondence with Mt Arthur Coal requesting a meeting with the General Manager to discuss their concerns. The Community Relations Coordinator immediately contacted an Open Cut Examiner who drove around the dumps and adjusted a light in the north dump. No other problematic lights were identified. The complainant phoned at 5 am, 27 March 2012 to advise that the light issue had not been rectified. The Community Relations Coordinator communicated this to the Open Cut Examiners who committed to undertaking nightly inspections of operations from Roxburgh Road. It was also confirmed that multiple attempts had been made to organise a meeting with the General Manager for the complainant. The complainant again phoned at 7.56 pm, 27 March 2012 indicating the light was still shining into their residence. The Community Relations Coordinator immediately contacted an Open Cut Examiner who confirmed that the scheduled inspection would occur within half an hour, and following the inspection confirmed that only erection pad lighting was identified which was already pointing down as far as possible. The complainant phoned at 5 am, 28 March 2012 to confirm that the light issue had not been rectified.
29/03/2012 3:00:00 PM	Denman Road	General Dust	A local resident phoned to advise of dust that was travelling from the mine site for a couple of hundred metres across Denman Road as they were travelling from Muswellbrook to Denman at 3 pm. The complainant noted that he could not identify it coming from a single source or piece of machinery as it appeared to be a general dust storm and the resident was concerned about the impact it had on driver's visibility. The Community Relations Coordinator asked if the complainant wanted to be phoned back to confirm the actions taken by Mt Arthur Coal to address the problem or to advise of monitoring results. This was declined by the complainant. The Community Relations Coordinator immediately contacted an Open Cut Examiner who advised that a high prevailing wind was experienced at 3 pm due to an approaching storm front. Due to high wind conditions throughout the day trucks had been moved into the lower areas of the pit and all available water carts had been deployed. The Environmental Coordinator also contacted a Contractor Supervisor to ensure contractors who were undertaking activities on topsoil stockpiles had a water cart operating in the area. The Contractor Supervisor also committed to travelling to the area to ensure dust was being appropriately managed. The Environmental Coordinator contacted the Dump Strategy Open Cut Examiner at 3.22 pm, prior to the complaint being received, to discuss recent dust alarms and request that dust monitoring and management continue. Dust levels recorded at the Denman Road West monitor were slightly elevated at the time of the complaint with a peak at 3.10 pm. However, dust levels at this time and throughout the day remained below the statutory limit.

30/03/2012 4:00:00 AM	Roxburgh Road	Operational Noise	A complaint was received from near-neighbour regarding operational noise coming from Mt Arthur Coal that could be heard at their residence since 4 am. The Community Relations Coordinator committed to registering the complaint, reviewing the noise monitoring details and discussing the noise issue with the operations team. Noise monitoring results on the night of 29 March were within statutory limits.
30/03/2012 10:15:00 AM	Denman	Blast Vibration	A complaint was received from a local resident regarding vibration they had felt from a blast. The resident noted that the vibration was fairly intense, shaking their house and contents. The Community Relations Coordinator returned the complainant's call to confirm that the vibration felt had been the result of a blast undertaken by Mt Arthur Coal at 10.15 am in Saddlers Pit, which is located towards the western side of the mine. The Community Relations Coordinator offered to provide the blast monitoring results, but the resident declined this offer. Blast overpressure and vibration results were within statutory limits at all blast monitors.
30/03/2012 9:40:00 PM	Roxburgh Road	Operational Noise	A complaint was received through the community response line from a resident along Roxburgh Road regarding low frequency and ongoing mining noise. A visit was undertaken on 30 March 2012 from approximately 10.20 pm to 11.00 pm to discuss concerns and provide feedback on the status of prior monitoring. Noise was audible from a number of operations on the night but levels were confirmed to be within statutory limits at the closest unattended monitor.
3/04/2012 10:40:00 AM	Racecourse Road	Blast Vibration	A resident registered a complaint in relation to blast vibration felt at their property. The complainant noted that the vibration was more prominent than other blasts they had felt and seemed to go for a long time. The Environmental Coordinator confirmed that the blast fired was at the northern end of the pit and that vibration and overpressure results were below statutory limits at all blast monitors.
3/04/2012 10:41:00 AM	Denman Road	Blast Vibration	A complaint was received via the community response line regarding vibration from a blast in Windmill pit. Blast monitoring results were below regulatory criteria. Blast overpressure was 108.55 dB and vibration was 0.35 mm/s at the nearest blast monitor. Weather conditions were suitable for blasting at the time of the blast, with wind speed approximately 2.1 m/s and wind direction from the north north west.
3/04/2012 10:45:00 AM	Racecourse Road	Blast Vibration	A complaint was received via the community response line regarding vibration from a blast in Windmill pit. The complainant noted that the vibration shook the walls of their house. The Environmental Coordinator called the complainant back the following day to confirm that blast monitoring results were below regulatory criteria. Blast overpressure was 96.53 dB and vibration was 0.67 mm/s at the nearest blast monitor. A copy of the results was sent to the complainant. Weather conditions were suitable for blasting at the time of the blast with a wind speed of 2.1 m/s from the north north west.

7/04/2012 8:39:00 AM	Roxburgh Road	Lighting	A complaint was received via the community response line resident regarding a light shining towards their residence. Based on the details provided by the complainant, the Environmental Coordinator immediately called an Open Cut Examiner and advised that the lights at the erection pad off Edderton Road would need to be redirected. The Open Cut Examiner redirected the lights and conducted an inspection from Roxburgh Road to ensure the matter was addressed. An earlier inspection had been undertaken by the Open Cut Examiner in the area in attempt to reduce light impacts.
7/04/2012 5:43:00 PM	Denman Road	General Dust	A complaint was received via the community response line regarding dust from a resident driving along Denman Road. The complainant expressed concern about the amount of dust in the air and dust management at Mt Arthur Coal. The Environmental Coordinator immediately called an Open Cut Examiner who advised that a wind storm had passed through approximately 30 minutes earlier causing regional dust levels to increase. On site meteorological data showed that wind direction changed from north west to south east at approximately 5 pm and wind speed increased from 2.4 to 6.9 m/s. The Open Cut Examiner also noted that operations in the northern end of the pit were suspended as a result of the changing wind direction and speed. Dumping for night shift was rescheduled to move to lower dumps to assist with dust management. At the time of the complaint wind speed was 7.1 m/s from the south east. It was recognised that dust levels were higher than normal during this time. However, the 24 hour average dust level was below regulatory criteria.
7/04/2012 5:59:00 PM	Denman Road	General Dust	A complaint was received via the community response line regarding dust. The complainant expressed concern over the amount of dust in the air following the wind storm which had occurred approximately 30 minutes earlier. On site meteorological data showed that wind direction changed from north west to south east at approximately 5 pm and wind speed increased from 2.4 to 6.9 m/s. The complainant recognised that the dust was coming from cumulative sources and was not restricted to just Mt Arthur Coal. The Environmental Coordinator advised that operations in the northern end of the pit were suspended as a result of the changing wind direction and speed and dumping for night shift had been rescheduled to lower dumps to assist with dust management. At the time of the complaint wind speed was 7.1 m/s from the south east. It was noted that dust levels were higher than normal during this time. However, the 24 hour average dust level was below regulatory criteria.
7/04/2012 6:16:00 PM	Muswellbrook	General Dust	A complaint was received via the community response line regarding dust from a resident at Wybong. The complainant noted that dust had reached as far as Yarraman Road through to Bunnan. The complainant recognised that the dust was coming from cumulative sources and was not restricted to Mt Arthur Coal. The Environmental Coordinator advised that a wind storm had passed through approximately 45 minutes earlier. As a result, the wind direction changed from north west to south east and wind speed increased from 2.4 to 6.9

			m/s. The Environmental Coordinator noted that operations in the northern end of the pit were suspended as a result of the changing wind direction and speed and dumping for night shift had been rescheduled to lower dumps to assist with dust management. At the time of the complaint wind speed was 8.8 m/s from the south east. It was noted that dust levels were higher than normal during this time. However, the 24 hour average dust level was below regulatory criteria.
13/04/2012 12:18:00 PM	Denman Road	Blast Overpressure Noise	A complainant phoned the community response line to report blast overpressure noise at their residence. The Superintendent Environment confirmed that a blast had been undertaken by Mt Arthur Coal. The complainant confirmed that they regularly received blast monitoring results. Weather conditions were suitable for blasting with a west south-west wind direction and wind speed less than 1 m/s. Blast results were below statutory limits, including at the blast monitor located closest to the complainant's residence which recorded 0.51 mm/s ground vibration and 96 dBL blast overpressure.
15/04/2012 8:29:00 AM	Roxburgh Road	General Dust	A resident called the community response line to register a complaint regarding dust deposited on their property overnight. The resident also advised that they could currently see a plume of dust located over the Mt Arthur Coal operation. To confirm current mining operational activities the Superintendent Environment called the Mine Dispatch Controller who indicated that all operational water carts were currently operating in the pit. Dust results from all real-time monitoring stations were below statutory limits, including at the Denman Road West monitor located closest to complainant's residence. This monitor recorded a peak 24 hour rolling average for PM10 dust during the night of 28 micrograms per cubic metre, below statutory limits. During the night, wind direction was predominantly south east to south west until approximately 3 am when the predominant wind direction changed to north north west. The average wind speeds during the night were less than 2 m/s.
30/04/2012 12:54:00 PM	Antiene	General Dust	A complaint was received via fax from a resident regarding dust and noise levels. The Environmental Superintendent contacted the resident and discussed mitigation measures that had been installed at their property to assist with managing the impacts of dust. The Environmental Superintendent also confirmed that attended noise monitoring undertaken regularly near the resident/s property had consistently recorded noise levels below statutory limits.

3/05/2012 11:20:00 AM	Denman Road	Blast Road Closure	Complaint received from a local resident regarding timing of a road closure on Denman Road, that was associated with a blast. Resident complained that the road closure and blast occurred earlier than was advertised on the sign, causing delay and disruption to their scheduled activities for the day. Coordinator Community Relations contacted the Superintendent Drill and Blast who confirmed that the blast occurred at 11.08 am which was earlier than the scheduled 11.30 am time that was advertised on the Denman Road blasting road closure sign, although the signage indicated that this was only an approximate timeframe. The Superintendent Drill and Blast also advised that the blast had occurred once everything was prepared and weather conditions were suitable for blasting, resulting in a road closure from approximately 11.00 am to 11.15 am. The Coordinator Community Relations attempted to return the complainant's call to further discuss their complaint, but was unable to contact them and left a message inviting them to again contact the Community Response Line if they had any further concerns.
5/05/2012 9:18:00 AM	Antiene	Blast Vibration	A resident lodged a complaint regarding blast vibration, as well as general dust concerns and a low-frequency noise at their residence. The Coordinator Community Relations contacted the resident to discuss and advised that Mt Arthur Coal was responsible for the blast. The Coordinator Community Relations also discussed the complainant's dust and noise concerns. Monitoring results were within regulatory limits, with 0.1 mm/s for vibration and 74.1 dBL for overpressure.
5/05/2012 9:20:00 AM	South Muswellbrook	Blast Vibration	A complaint was received from a resident related to a blast at 9.18 am. The complainant had concerns regarding vibration impacting their residence. Blast results were below regulatory limits at 97.38dB and 0.22mm/s.
5/05/2012 9:25:00 AM	South Muswellbrook	Blast Vibration	A complaint was received from a resident related to a blast at 9.18 am. A copy of the blast results were posted out to the resident with an offer to discuss any additional details.
5/05/2012 9:25:00 AM	South Muswellbrook	Blast Vibration	A complaint was received from a resident related to the impacts of a blast in their residence. A copy of the blast results were posted out to the resident with an offer to discuss any additional details.
5/05/2012 9:25:00 AM	South Muswellbrook	Blast Vibration	A complaint was received via the Community Response Line from a resident about the impact of a blast on their residence and monitoring levels. The complainant advised that their house shook from the blast. Monitoring results for the blast were within regulatory limits. Vibration was 0.22 mm/s and overpressure was 84.7 dBL at the monitor nearest to the complainant. No additional information was requested by the complainant.
5/05/2012 9:30:00 AM	Aberdeen	Blast Vibration	A community complaint was received via the community response line from an Aberdeen resident regarding blast RXs2570 on Saturday 5 May 2012. The Environment Superintendent returned the complainants call. The complainant noted that they felt a blast at their residence. The Environment Superintendent confirmed that Mt Arthur Coal was responsible for the blast and that results were within statutory limits, however an

			investigation was currently underway. Monitoring results for blast RXs2570 were within regulatory limits.
11/05/2012 10:09:00 AM	Denman	Lighting	A resident called the Community Response Line about a single flood light that had been shining towards their property for the previous four nights. The resident requested that the light be rectified that day. The Superintendent Environment contacted an Open Cut Examiner and requested they rectify the lighting issue during the day, as well as communicate this complaint to night shift personnel. An Open Cut Examiner identified the light and redirected it away from the complainant's property. The light was also switched off early in the evening for the following three nights. No further complaint was received from the resident.
16/05/2012 6:30:00 AM	Roxburgh Road	Operational Noise	A complaint was received from a near-neighbour regarding a low-frequency noise that could be heard at their residence. The Superintendent Environment informed the resident that monitoring results were below regulatory limits at the nearest noise monitor and that the coal handling preparation plant had been operating at reduced feed rates during the evening. The Superintendent Environment advised that the noise monitoring report detailing the noise monitoring conducted at the complainants residence was currently being reviewed and the outcomes would be provided to the resident.
17/05/2012 11:50:00 PM	Roxburgh Road	Operational Noise	A complaint was received from a near-neighbour regarding a low-frequency noise that could be heard at their residence. The Superintendent Environment informed the resident that no mining noise was detected in the audio recordings at the nearest noise monitor and that the Open Cut Examiner could not isolate any specific dominant noise source after driving along Denman Road and Edderton Road. The Superintendent Environment advised that the noise monitoring report was currently being revised to include the correlation of monitoring results collected at their residence with the nearest permanent noise monitor. At the time of the complaint, temperature was approximately 10 degrees Celsius under calm wind conditions (less than 0.1m/s). No rainfall was recorded. Noise monitoring results for the night were below regulatory limits at the nearest real-time noise monitor.
18/05/2012 11:57:00 AM	Roxburgh Road	Blast Vibration	A resident called the Community Response Line to register a complaint about blast vibration felt at their property. An elevated result was recorded at the Denman Road West monitoring station. An investigation found that the results were invalid due to an air gap surrounding the concrete block that couples the monitor to the ground. An investigation report was also sent to the complainant.
18/05/2012 11:57:00 AM	Muswellbrook	Blast Vibration	The resident called the Community Response Line about blast vibration felt at their property. An elevated result was recorded at the Denman Road West monitoring station. An investigation found that the results were invalid due to an air gap surrounding the concrete block that couples the monitor to the ground.

18/05/2012 12:00:00 PM	Roxburgh Road	Blast Vibration	The complainant called the Community Response Line to register a complaint about blast vibration felt at their property. An elevated result was recorded at the Denman Road West monitoring station. An investigation found that the results were invalid due to an air gap surrounding the concrete block that couples the monitor to the ground.
18/05/2012 12:05:00 PM	Denman Road	Blast Vibration	The complainant called the Community Response Line to register a complaint about blast vibration felt at their property. An elevated result was recorded at the Denman Road West monitoring station. An investigation found that the results were invalid due to an air gap surrounding the concrete block that couples the monitor to the ground. An investigation report was also sent to the complainant.
18/05/2012 12:08:00 PM	Roxburgh Road	Blast Vibration	A complaint was received regarding blast vibration. The complainant was concerned about potential damage to their water tanks from the blast. The complainant also noted that they informed the Department of Planning and Infrastructure about their concern. An elevated result was recorded at the Denman Road West monitoring station. An investigation found that the results were invalid due to an air gap surrounding the concrete block that couples the monitor to the ground. An investigation report was also given to the complainant. The complainant also registered a complaint about general dust at their residence and boxthorn weed at a neighbouring property owned by Mt Arthur Coal. Air quality results have been consistently below statutory limits at the nearest monitor. The Mt Arthur Coal Property Coordinator confirmed that arrangements had been made to spray weeds at the property.
18/05/2012 12:36:00 PM	Denman	Blast Vibration	The complainant called the Community Response Line to register a complaint about blast vibration felt at their property. An elevated result was recorded at the Denman Road West monitoring station. An investigation found that the results were invalid due to an air gap surrounding the concrete block that couples the monitor to the ground. An investigation report was also sent to the complainant.
20/05/2012 11:29:00 PM	Roxburgh Road	Operational Noise	A community complaint was received via the Community Response Line from a Roxburgh Road resident regarding a 'constant booming noise' that could be heard at their residence. The complainant requested to be called back the following day. The Environmental Coordinator contacted the Open Cut Examiner at the time of the complaint to discuss current operations. The Open Cut Examiner confirmed that dumping was being undertaken on lower levels within the northern end of the pit. The Open Cut Examiner agreed to drive out and listen for the noise in an attempt to identify the source and manage operations accordingly. Dispatch advised that equipment was shut down between 1.00 am to 4.00 am due to fog. The noise level was approximately 30.5 dBA at the time of the complaint. The Environmental Coordinator called the complainant back the following day and advised that monitoring results were below regulatory criteria. The complainant requested a list of the times they had called over the last 10 months. The list was provided to the complainant later in the week.

24/05/2012 12:18:00 PM	Racecourse Road	Blast Overpressure Noise	A resident called to register a complaint about a blast that shook their house. Monitoring results indicated that the impacts felt by the complainant were due to blast overpressure which was recorded above statutory limits at the nearest monitor. An investigation was conducted which identified opportunities for improvement which will be implemented.
24/05/2012 12:18:00 PM	Racecourse Road	Blast Overpressure Noise	A community complaint was received regarding a blast in windmill pit. The complainant called and spoke to the Environmental Coordinator. The complainant noted that a clock and frame had fallen off the wall as a result of the blast. The complainant also noted that their house shook. The Environmental Coordinator offered to call the complainant back as soon as the results were available. The Environmental Coordinator called the complainant back later that day and advised that results were higher than normal at the monitor closest to the complainant and an internal investigation would be undertaken. Weather conditions were suitable for blasting at the time of the blast. The Environmental Coordinator and General Manager offered to visit the complainant the following day. The complainant was unable to meet due to a prior commitment and the meeting was rescheduled. Monitoring results were above the statutory limit of 120 dBL at Racecourse and Yammanie monitors. An investigation was conducted which identified opportunities for improvement which will be implemented.
24/05/2012 12:19:00 PM	Denman Road	Blast Overpressure Noise	A community complaint was received via the Community Response Line from a Denman Road resident regarding a blast in windmill pit. The Environmental Coordinator returned the complainants call. The complainant stated that they felt their house shake due to the blast. The Environmental Coordinator offered to call back once they had received the blast monitoring results however the offer was declined. Weather conditions were suitable for blasting at the time of the blast. Monitoring results were above the statutory limit of 120 dBL at Racecourse and Yammanie monitors. An investigation was conducted which identified opportunities for improvement which will be implemented.
24/05/2012 12:19:00 PM	Denman Road	Blast Vibration	A community complaint was received via the Community Response Line regarding a blast. The complainant was in the process of lodging a complaint about a blast that had just gone off minutes earlier when they felt their house shake from the second blast. The Environmental Coordinator offered to call back once they had received the blast results but this offer was declined. The second blast monitoring results were below regulatory criteria. Blast results were below statutory limits. Weather conditions were suitable for blasting at the time of the blast.

24/05/2012 12:20:00 PM	Racecourse Road	Blast Overpressure Noise	A community complaint was received via the Community Response Line from a resident regarding blast overpressure. The Environmental Coordinator returned the complainants call. The complainant noted that the blast shook their house and caused an ornament to break. The Environmental Coordinator offered to call the complainant back as soon as the results were available. The Environmental Coordinator called the complainant back later that day and left a message advising that results were higher than normal at the monitor closest to the complainant and an internal investigation would be undertaken. The Environmental Coordinator and General Manager offered to visit the complainant at their residence. The offer was accepted and a meeting was scheduled. The Environmental Coordinator, Community Relations Superintendent and General Manager went to the complainants residence, but the resident was unable to attend the meeting and it has been rescheduled. Weather conditions were suitable for blasting at the time of the blast. Monitoring results were above the statutory limit of 120 dBL at Racecourse and Yammanie monitors. An investigation was conducted which identified opportunities for improvement which will be implemented.
24/05/2012 12:20:00 PM	Muswellbrook	Blast Overpressure Noise	A community complaint was received from a resident regarding blast overpressure. The Environmental Coordinator returned the complainants call. The complainant noted that the blasts shook the inside of their house. The Environmental Coordinator advised that monitoring results were higher than normal at the monitor closest to the complainant and an internal investigation would be undertaken. The complainant requested a copy of the outcomes from the internal investigation. The Environmental Coordinator confirmed that a copy would be provided to the complainant once the investigation was completed. Weather conditions were suitable for blasting at the time of the blast. Monitoring results were above the statutory limit of 120 dBL at Racecourse and Yammanie monitors. An investigation was conducted which identified opportunities for improvement which will be implemented. The complainant also noted that they felt a blast at their residence on Saturday 5 May and wanted to confirm that this blast was from Mt Arthur Coal. The Environmental Coordinator confirmed that Mt Arthur Coal did blast on that day.
24/05/2012 12:24:00 PM	Racecourse Road	Blast Overpressure Noise	A community complaint was received from a resident regarding blast overpressure. The complainant noted that the blast was louder than normal and shook their residence. The Environmental Coordinator returned the complainants call and advised that monitoring results were higher than normal at the monitor closest to the complainant. The Environmental Coordinator noted that an internal investigation would be undertaken and offered to visit the complainant the following day. This offer was declined. Weather conditions were suitable for blasting at the time of the blast. Monitoring results were above the statutory limit of 120 dBL at Racecourse and Yammanie monitors. An investigation was conducted which identified opportunities for improvement which will

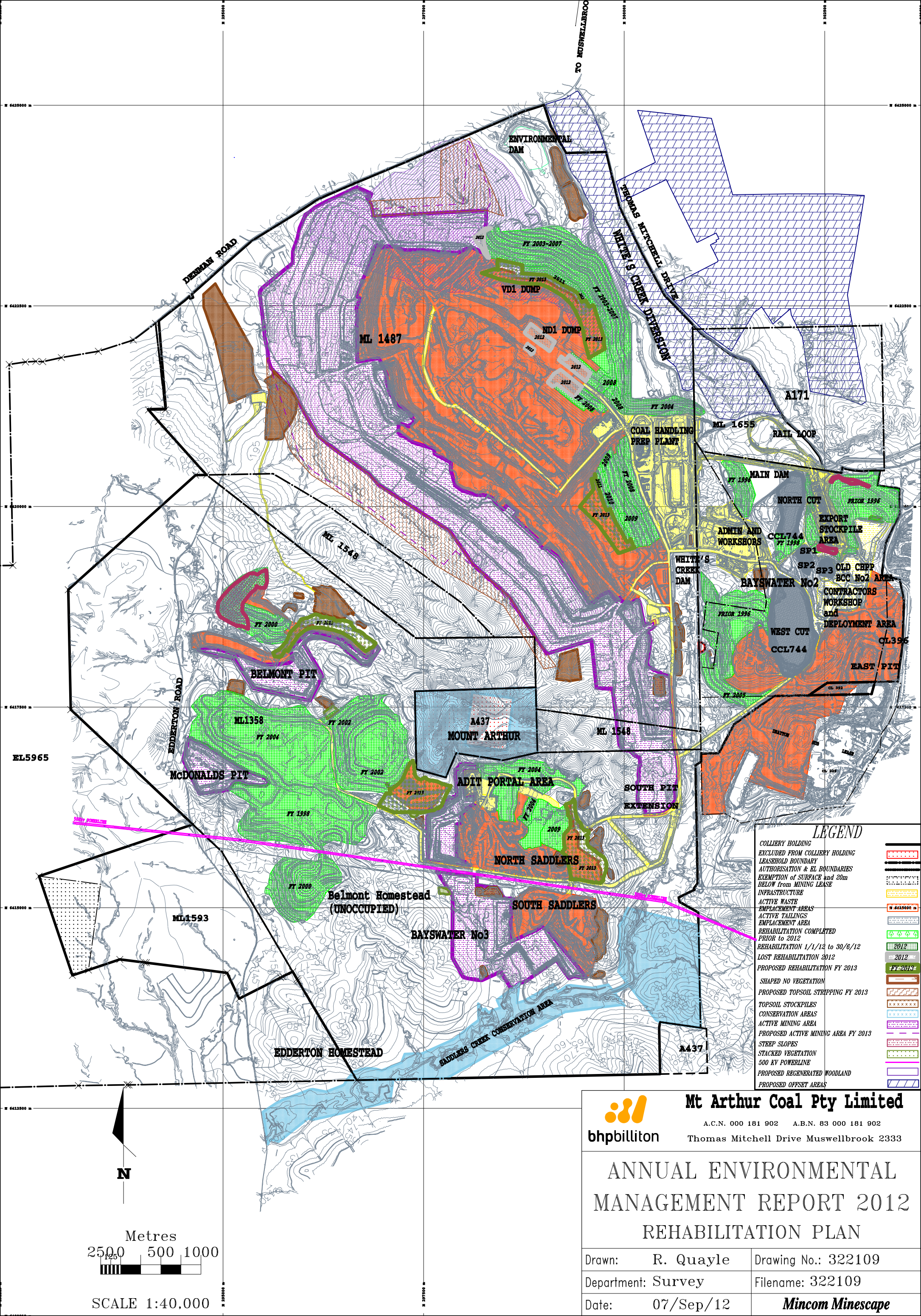
			be implemented.
24/05/2012 12:30:00 PM	Denman Road	Blast Overpressure Noise	A community complaint was received via the Community Response Line from a resident regarding dust from two blasts. The complainant also noted that the blasts were louder than normal. The Environmental Coordinator returned the complainants call. Real time air quality monitoring results were below regulatory criteria and weather conditions were suitable for blasting at the time of the blast. Blast monitoring results from the temporary monitor installed at the complainants residence were below regulatory criteria.
24/05/2012 12:48:00 PM	Roxburgh Road	Blast Overpressure Noise	A resident registered a complaint about a blast that shook their house. The Environmental Coordinator informed the complainant that monitoring results indicated that the impact felt was due to blast overpressure. The complainant noted that they heard a loud bang amongst the sound of the blast. The Environmental Coordinator confirmed that this was consistent with the report from the drill and blast team that a hole blew out during the blast. The complainant noted that a second blast was also felt that was longer in duration than the first. The Environmental Coordinator confirmed that the second blast was also fired by Mt Arthur Coal. An investigation was conducted which identified opportunities for improvement which will be implemented.
25/05/2012 9:32:00 AM	Muswellbrook	Blast Overpressure Noise	A community complaint was received from a resident regarding a blast on 24 May 2012. The Environmental Coordinator returned the complainants call. The complainant noted that they had felt the blast at their residence and expressed concern over the impacts of blasting. The Environmental Coordinator advised that results were higher than normal at the monitor closest to the complainant and an internal investigation would be undertaken. Weather conditions were suitable for blasting at the time of the blast. Monitoring results were above the statutory limit of 120 dBL at Racecourse and Yammanie monitors. The Environmental Coordinator, General Manager and Community Superintendent offered to visit the complainant at their residence the following Monday morning. The complainant agreed to this offer. An investigation was conducted which identified opportunities for improvement which will be implemented.
29/05/2012 10:34:00 PM	Roxburgh Road	Operational Noise	A complaint was received from a received regarding a low-frequency noise that could be heard at their residence. The complainant requested not to be contacted that night. The Superintendent Community Relations returned the complainant's call the following day and confirmed that low level operational noise was audible at the Denman Road West monitor throughout periods of the night. Winds were 1-2 m/s from the south east until approximately 1.00 am when the level reduced. Scattered rain occurred after 4.00 am.
30/05/2012 4:03:00 AM	Roxburgh Road	Operational Noise	A complaint was received from a near-neighbour regarding a low-frequency noise that could be heard at their residence. The complainant requested not to be contacted that night. The Superintendent Community Relations returned the complainant's call the following

			day and confirmed that low level operational noise was audible at the Denman Road West monitor throughout periods of the night. Winds were 1-3m/s from the south east. Noise monitoring results were within statutory limits.
31/05/2012 8:23:00 AM	Roxburgh Road	Operational Noise	A complaint was received from a near-neighbour regarding a low-frequency noise that could be heard at their residence. The Superintendent Community Relations returned the complainant's call the following day. Low level operational noise was audible at the Denman Road West monitor throughout periods of the night. Winds were 1-2m/s from a south east direction. Noise monitoring results were within statutory limits.
2/06/2012 3:14:00 AM	Roxburgh Road	Operational Noise	A complaint was received from a near-neighbour regarding a low-frequency noise that could be heard at their residence. The complainant requested not to be contacted that night. The Community Relations Superintendent returned the complainant's call the following day. The complainant advised the noise had not been as audible as on previous nights. Noise monitoring results at the Denman Road West monitor were below statutory limits at the time of the complaint. Wind direction was from a south east direction. Wind speed was 1-3m/s. There was no rainfall during the night.
3/06/2012 7:45:00 AM	Roxburgh Road	Operational Noise	A complaint was received from a near-neighbour regarding a low-frequency noise that could be heard at their residence from 2.00 am. The Community Relations Superintendent returned the complainants call. Noise monitoring results at the Denman Road West monitor were below statutory limits from 10.00pm on the 2 June 2012 to the time of the complaint at 7.45 am. Wind direction was from a south east direction. Wind speed was 0-2.2 m/s. Rainfall during the night was recorded at 9.4 mm.
3/06/2012 10:47:00 PM	Roxburgh Road	Operational Noise	A resident called the Community Response Line to register a complaint about a low frequency noise that could be heard from their residence. The Environmental Advisor returned the complainant's call the next morning, as requested and informed the complainant that mining operations at Mt Arthur Coal ceased during the night due to wet conditions. The Environmental Advisor and the complainant also discussed previous nights when the noise was also heard that either mining operations had suspended or the coal handling and preparation plant had not been operating. Wind speed was less than 1 m/s from the south west. There was rain throughout the night.
4/06/2012 2:37:00 PM	Denman Road	Blast Vibration	A resident called the Community Response Line to register a complaint about blast vibration felt at their residence. The Environmental Advisor confirmed that Mt Arthur Coal had blasted at the time vibration was felt. The complainant confirmed that no follow up action was required. Blast results were within statutory limits at all blast monitors.

6/06/2012 4:08:00 AM	Roxburgh Road	Operational Noise	A resident called the Community Response Line regarding low-frequency noise that could be heard from their residence. The Environmental Advisor immediately contacted an Open Cut Examiner and confirmed that mining operations had ceased throughout the night due to wet conditions. The Environmental Advisor returned the complainant's call the following morning, as requested. The complainant confirmed that the noise was heard constantly throughout the day and night.
7/06/2012 10:08:00 PM	Roxburgh Road	Lighting	A resident called the Community Response Line to register a complaint about two bright lights visible from their property. The Environmental Advisor immediately called an Open Cut Examiner who informed them that they had inspected the mine from Roxburgh Road the previous night, but did not identify any lights of concern and lights had not been moved. The Open Cut Examiner then completed another inspection of lights from Roxburgh Road and identified two brighter lights that were redirected.
7/06/2012 11:00:00 PM	Roxburgh Road	Operational Noise	A resident called the Community Response Line at 11.00 pm and again at 4.00 am to register a complaint about a constant low frequency noise. The Environmental Advisor returned the complainant's calls the following morning as requested. The Environmental Advisor advised the complainant that mining operations ceased at 2.00 am due to heavy fog. The Environmental Advisor proposed contacting the complainant during the next shut down at the coal processing plant to identify whether this stopped the noise of concern. The complainant agreed to this proposal. The Environmental Advisor called the complainant on 14 June following a shut down of the coal processing plant from the afternoon of 13 June . The complainant confirmed that they could still hear the noise of concern during this time suggesting that the coal processing plant is not the noise source.
9/06/2012 4:04:00 AM	Roxburgh Road	Operational Noise	A complainant called the Community Response Line to register a complaint about a constant low frequency noise. The Environmental Advisor contacted an Open Cut Examiner who advised that mining operations had ceased an hour prior to the complaint due to weather conditions. The coal processing plant control room was also contacted and it was confirmed that the coal processing plant was operating as normal. The complainant requested for their call not to be returned.
13/06/2012 6:44:00 PM	Muswellbrook	Business Process	An invoice for work completed on site by an external stakeholder was not paid. As a result, a complaint was made by an external stakeholder to the Community Relations team. The Community Relations Administration Assistant followed up the issue with the Supply team, who determined the cause of the situation. The Supply team rectified the issue and ensured payment was made to the external stakeholder.

14/06/2012 1:12:00 AM	Roxburgh Road	Operational Noise	A community complaint was received via the Community Response Line from a resident regarding a constant noise that could be heard at their residence. The complainant requested not to be called back. At the time of the complaint the Denman Road west noise monitor was not operational due to equipment failure however all other noise monitors surrounding the site were below regulatory criteria and weather conditions were suitable for operations. Temperature was approximately 11.79 degrees Celsius with a wind speed of 0.66 m/s from the south east. The Environment Coordinator was advised the following day that the coal handling preparation plant was shut down at the time of the complaint.
14/06/2012 9:00:00 AM	Muswellbrook	Business Process	A BHP Billiton invoice rejection notice given to a local business stakeholder did not reflect accurate information which lead to the hold up of the payment process. As a result, a complaint was made by an external stakeholder to the Community Relations team. The Community Relations Administration Assistant followed up the issue with the Supply team, who determined the cause of the situation. The Supply team addressed the issue and payment was made to the external stakeholder.
14/06/2012 10:41:00 AM	Roxburgh Road	Operational Noise	A community complaint was received via the Community Response Line from a Roxburgh Road resident regarding mining noise that could be heard at their residence. At the time of the complaint the Denman Road West noise monitor was not operational due to equipment failure, however all other noise monitors surrounding the site were below regulatory criteria and weather conditions were suitable for operations. Temperature was approximately 9.67 degrees Celsius with a wind speed of 1.25 m/s from the north west. The Environmental Coordinator called the Open Cut Examiner who advised that dumping was not being undertaken on high dumps and dispatch advised the following morning that equipment in the northern end of the pit had ceased at approximately 2.00 am due to fog. The Environmental Coordinator called the complainant back the following day and advised that available monitoring results were below regulatory limits.
22/06/2012 11:20:00 AM	Skeletar Stock Route	Blast Overpressure Noise	A resident called Mt Arthur Coal directly to report a blast felt at their residence. The Environmental Coordinator confirmed that a blast had been undertaken by Mt Arthur Coal. The resident asked for the location of the blast and the Environment Coordinator confirmed that the blast occurred in the Windmill Pit. The Environmental Coordinator asked if the resident would like to be provided with blast monitoring results. The near-neighbour declined the offer of blast monitoring results.
27/06/2012 4:07:00 AM	Roxburgh Road	Operational Noise	A complaint was received from a neighbour regarding a continuous low frequency noise that could be heard at their residence. The complainant requested not to be contacted that night. The Advisor Environment returned the complainant's call the following day and informed the resident that there was no significant change to operations and monitoring results were below regulatory limit. Winds were 1-3m/s predominantly from the south east direction. No rainfall was recorded.

Appendix 8 – Rehabilitation Plan



LEGEND

- COLLIERY HOLDING
- EXCLUDED FROM COLLIERY HOLDING
- LEASEHOLD BOUNDARY
- AUTHORISATION & EL BOUNDARIES
- EXEMPTION of SURFACE and 20m BELOW from MINING LEASE
- INFRASTRUCTURE
- ACTIVE WASTE EMPLACEMENT AREAS
- ACTIVE TAILINGS EMPLACEMENT AREA
- REHABILITATION COMPLETED PRIOR to 2012
- REHABILITATION 1/1/12 to 30/6/12 — 2012
- LOST REHABILITATION 2012 — 2012
- PROPOSED REHABILITATION FY 2013 — FY 2013
- SHAPED NO VEGETATION
- PROPOSED TOPSOIL STRIPPING FY 2013
- TOPSOIL STOCKPILES
- CONSERVATION AREAS
- ACTIVE MINING AREA
- PROPOSED ACTIVE MINING AREA FY 2013
- STEEP SLOPES
- STACKED VEGETATION
- 500 KV POWERLINE
- PROPOSED REGENERATED WOODLAND
- PROPOSED OFFSET AREAS

Mt Arthur Coal Pty Limited

A.C.N. 000 181 902 A.B.N. 83 000 181 902

Thomas Mitchell Drive Muswellbrook 2333

bhpbilliton

ANNUAL ENVIRONMENTAL MANAGEMENT REPORT 2012

REHABILITATION PLAN

Drawn:	R. Quayle	Drawing No.:	322109
Department:	Survey	Filename:	322109
Date:	07/Sep/12		Mincom Minescape