DONALDSON COAL ANNUAL ENVIRONMENTAL MANAGEMENT REPORT

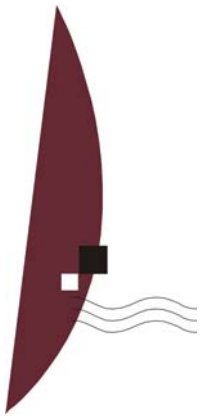
As prescribed by Donaldson Coal Development Consent (114 –116) and the Mining Act 1992.

DONALDSON COAL MINE

Reporting Period:

1st November 2005 to 31st October 2006

Name of mine:	*Donaldson Coal Mine.*
Mining Titles/Leases:	*Mining Lease 1461*
MOP Commencement Date	*1st June 2002*
MOP Completion date (nominal)	*1st June 2012*
Name of leaseholder:	*Donaldson Coal Pty Ltd*
Name of mine operator (if different):	*Cooks Construction Pty Ltd*
Reporting Officer:	*Mr Phillip Brown*
Title:	*Environmental Manager*
Signature	.....
Date	/ /



DONALDSON COAL MINE

Annual Environmental Management Report (AEMR) 2005-2006

Prepared by:

Phillip Brown - Environmental Manager
Donaldson Coal Pty Ltd

Authorised by:	Doug Gordon (General Manager, Operations)
Signature:	
Distributed to:	
Location:	

C O N T E N T S

APPENDICES

i PURPOSE OF THE REPORT

Donaldson Coal Pty Ltd. (Donaldson) has prepared this report to fulfill the reporting requirements of the Donaldson Mine Development Consent, condition 114.

This report was also completed to satisfy the annual reporting requirements of the Department of Primary Industries, Mineral Resources (MR) and as such was prepared in accordance with the revised *Environmental Management Guidelines for Industry – Guidelines to the mining, rehabilitation and Environmental Management Process* [1] (Version 3 dated January 2006). This guideline replaces the following guidelines previously relevant to the compilation of this report:

- Guidelines to The Mining, Rehabilitation And Environmental Management Process: DOC: 080600001.gui Issue 2 Revision 5 dated February 1998;
- Guidelines for the Preparation of Annual Environmental Management Reports (AEMR) DOC: 080600003.gui Issue 2 Revision 5 dated February 1998; and
- The Annual Rehabilitation Report Form Open Cut Mines DOC: 080600003.rec1 Issue 2 Revision 2 dated March 1998;
- Revised guidelines to The Mining, Rehabilitation And Environmental Management Process: DOC: Version dated April 2002;
- Revised guidelines to The Mining, Rehabilitation And Environmental Management Process: DOC: Version 2 dated December 2002;

This report provides a detailed review of the site environmental management over the annual reporting period 1st November 2005 to 31st October 2006.

ii DONALDSON COAL ENVIRONMENTAL POLICY

Donaldson is managed in accordance with an Environmental Management System (EMS) based on a recognised international standard (ISO 14001). In accordance with this standard, Donaldson has adopted an Environmental Policy. The policy details the commitment made by Donaldson to ensure that a high standard of environmental care is met. A copy of the policy is attached as **Appendix 1** of this report.

[1] NSW DPI (2006) ***Guidelines to the Mining, Rehabilitation and Environmental Management Process,*** EDG03, Version 3 (dated January 2006).

1 INTRODUCTION AND GENERAL INFORMATION.

1.1 DEVELOPMENT – OVERVIEW.

The Donaldson open cut mine is located 23km from the Port of Newcastle, north of John Renshaw Drive and west of Weakleys Drive. The mining lease is contained within the Cessnock and Maitland Local government areas. An aerial photograph showing the location of the mine in a regional context is attached as **Appendix 2** of this report.

Donaldson Coal Mine commenced operation on 25th January 2001, following approval by the then Minister of Urban Affairs and Planning (now known as the Department of Infrastructure, Planning and Natural Resources, DIPNR) in 1999. Mining is undertaken by way of truck and shovel mining techniques. During the first twelve months of the operation, the bulk of the overburden material was placed in an out of pit emplacement, 1.5km south west of the active pit. This was undertaken to allow sufficient opening up of the pit to expose the various coal seams. Since March 2002, the majority of the overburden material has been dumped in pit, backfilling the void once the coal has been mined out Reshaping of the backfill to a landform commensurate to the existing topography commenced in September 2002.

The first load of coal was railed from Donaldson on the 26th March 2001. To date approximately 7,784,372 tonnes of coal has been railed to both Hunter Valley power stations and international customers, through the Port of Newcastle. Mining is currently conducted under long term contract with Cooks Construction Pty Ltd (Cooks). All mining and associated operations are undertaken in accordance with the Development Consent, Environment Protection Licence and other statutory instruments as issued by the various government agencies.

1.2 CONSENTS, LEASE AND LICENCES

Table 1 provides a current list of statutory instruments in effect, including the date of grant of all leases, subleases, consents, approval or licenses. It also includes information relating to the current Mining Operations Plan (MOP). Details of any amendments to the MOP since the last AEMR are described in section 1.2.1 below.

TABLE 1: LIST OF CURRENT CONSENTS, LEASE AND LICENCES

Instrument	Date of Issue	Date of Expiration	Comments
Mining Lease (No. 1461)	22/12/1999	22/12/2020	• A copy of the mining lease is available for review at the Donaldson Coal office.
Mining Operations Plan	1/06/2002	1/06/2006	• Amended MOP as approved by the DMR. • MOP submitted to cover the period to 2012.
Development Consent	14/10/99	March 2011	• A copy of the Development Consent is available for review at the Donaldson Coal office. • 11 years after the commencement of mining. • Certain conditions of the consent will continue to operate after the consent for mining operations has lapsed.
Environment Protection Licence (No. 11080).	13/09/2000	Valid until cancelled.	• Licence was reviewed in June 2004. • Latest Annual Return submitted to the DEC on the 7th November 2006.
Water Works Licence (No. 20SL060534)	19/02/2001		• The licence covers earthworks associated with the construction of clean water diversion around the mining operation and out of pit emplacement.
Bore Licence (No. 20BL168123)	12/11/2001		• Issued to cover groundwater extraction as a result of the active mining area.
Bore Licence (No. 20BL168124)	12/11/2002		• The licence has been issued to cover the five test bores established to cover groundwater monitoring at the mine. It also incorporates the thirteen bores established as part of the EIS groundwater investigation.

1.2.1 Amendments to the Mining Operations Plan (MOP)

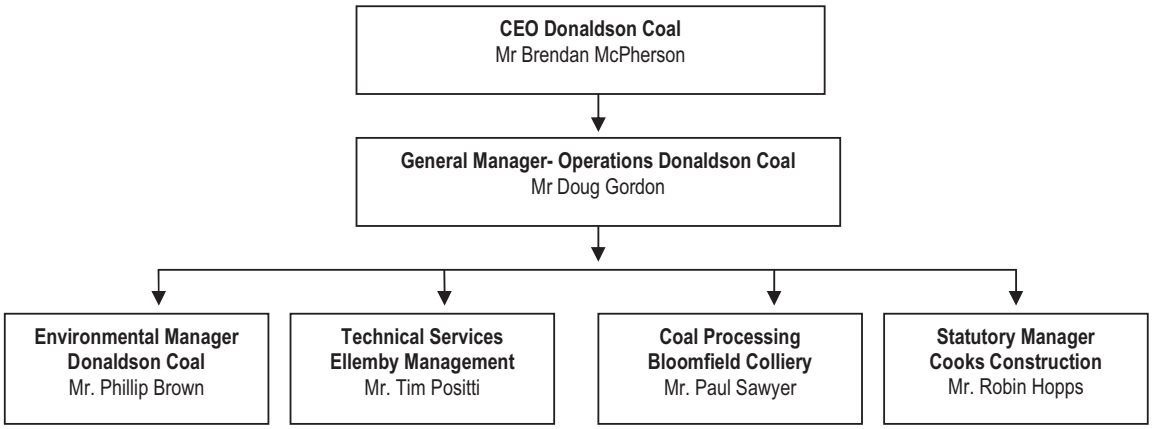
Development Consent and a mining lease have been granted to Donaldson Coal Pty Ltd to mine coal for a period of eleven (11) years. The initial Mining Operations Plan (MOP) covered a period of twelve (12) months of mining activity and was submitted to the DMR in September 2000 to enable operations to commence in January 2001.

An amended MOP and associated plans were submitted to the DMR to cover the period January 2002 through to June 2006. A subsequent MOP was submitted to the Department in June 2006 to cover the remaining life of mine. This MOP also covers the relocation of the Hunter Water Board pipeline.

1.3 MINE CONTACTS

Donaldson Coal Pty Ltd owns the mining operation and is the holder of the current mining lease. Cook's currently conducts the mining under long term contract. Cooks are responsible for all aspects of the mining at Donaldson Coal and as such are required to make appropriate appointments to fulfil the requirements of all statutory positions.

The following basic organisational chart shows the site personnel responsible for the various aspects of the operation.



The following contacts have been provided for the General Manager - Operations and the Environmental Manager:

Donaldson Coal Mine
Four Mile Creek Road
PO Box 2275
GREENHILLS NSW 2323

Phone:	(02) 49342798	Community Hotline (24hrs): 1800 111 271
Fax:	(02) 49342736	
e-mail:	donaldson@doncoal.com.au	
Internet:	www.doncoal.com.au	

1.4 ACTIONS REQUIRED AT PREVIOUS AEMR REVIEW

Officers of the Department of Primary Industries, Mineral Resources (MR) conducted an annual environmental inspection at Donaldson Coal Mine on the 31st July 2006. The purpose of the inspection was to investigate compliance with the environmental requirements and various relevant approval instruments, including the mining lease, MOP and the AEMR.

Table 2 details the list of actions required by the MR following the inspection and includes the works undertaken by Donaldson, as well as the date that the works were completed.

TABLE 2: **ACTIONS REQUIRED FROM THE MAY 2005 ANNUAL INSPECTION.**

Action Required	Where Dealt with in this AEMR
Ensure drainage lines are stable with correct grades. Remove silt from dams on a regular basis. Revegetate or armour exposed surfaces effectively.	3.2.3
Investigate the effectiveness of acid mine drainage remedial measures. Confirm the long term buffering potential of materials receiving acid seepage. Report progress in the next AEMR.	5.4

2 OPERATIONS DURING THE REPORTING PERIOD

The following section briefly describes the general operation at the Donaldson Coal mine during the AEMR reporting period 1st November 2005 – 31st October 2006.

2.1 EXPLORATION

Donaldson drilled 50 open holes in 2006. The drilling was used in the delineation of the Level of Oxidation (LOX) along the western margin of the pit and to determine local structure features within the mining area. All drilling was confined to 50m depth or less.

Exploration is planned during the next AEMR reporting period as follows:

- Ten or more open holes are likely to be required to further define the limit of oxidation ahead of mining.

2.2 LAND PREPARATION

The Donaldson mine site is characterised by native woodland and forest communities. A detailed description is included in the Flora and Fauna Management Plan (Gunninah, 2000; pp6). Although previously disturbed by activities such as logging, deliberate bushfires and recreational pursuits (eg. motorbikes, etc), careful treatment is planned to minimise disturbance and its impact in preparation for mining activities.

All works undertaken during the reporting period have been undertaken in accordance with the commitments made in the amended MOP (May 2002). This has included the following:

- The survey and marking of areas to be cleared ahead of the mining operations;
- Minimising cleared areas to only those needed specifically for mining activities;
- Undertaking pre-clearing surveys to assess the presence of rare and endangered flora and fauna species, as well as to mark potential habitat trees to be retained and stockpiled for further use in the rehabilitated areas;
- Archaeological surveys with the local Mindaribba Lands council both before clearing operations and during topsoil stripping;
- The assessment and recovery of all useable timber resources for fence posts, firewood and poles ahead of the clearing operations. To date broad scale mulching of the waste timber has

not been considered an economical option and therefore any timber not salvaged as part of the timber recovery operations is windrowed and buried in the pit as required.;

- Seed collection (where appropriate);

All topsoil ahead of the operation has been stripped and either taken to stockpile or direct spread over reshaped areas. Wherever possible, stockpiles are managed in accordance with the Erosion and Sediment Control Plan (Global Soils, 2000). There have been some occasions where stockpile heights have exceeded the maximum height of three (3) metres due to space limitations and not wanting to clear additional areas outside of the mining footprint. Where this has occurred, these topsoil stockpiles will be the first to be used once areas become available for direct spreading.

Water management and sediment control structures are in place in accordance with the requirements of the Water Management Plan (Perrens, 2000) and the Erosion and Sediment Control Plan.

To date visual screening has not been needed as the current working areas are protected by naturally occurring topographical features. Care is taken to position lighting towers on the in pit dumps to make sure they are pointed away from the residential areas when working at night.

2.3 CONSTRUCTION

There were no buildings constructed during the reporting period.

2.4 MINING

The planned mine capacity is based upon the removal of 7.0Mbcm of waste and 2.5Mtonnes of ROM coal each year, on a current roster of 2 x 8 hour shifts per day, five days per week plus the option of one (1) shift on Saturdays. Occasional periods of night shift operations (on a five-day basis) may also be required for coal preparation, or may be used to make up for lost production during wet periods. Maintenance will generally be performed on the “back” shifts. Working hours are typically between 6:00am to 11:30pm even though 24 hour operations are permitted under the consent.

The mining method employed is a “terrace mining” approach, with 75m strips oriented both perpendicular to, and along the strike. This arrangement provides the following advantages:

- Multiple seam plies are available simultaneously for blending purposes;
- Backfill void can be accessed quickly, thereby minimising out-of-pit dumping; and
- Haul distances to the backfill are minimised.

The thin nature of the seams and interburdens provides opportunities for efficient mining techniques including dozer push (to final position). **Table 3** shows the production and waste summary for this AEMR reporting period.

TABLE 3: PRODUCTION & WASTE SUMMARY

	Cumulative Production (cubic metres)		
	Start of Reporting Period	At end of Reporting Period	End of next reporting (estimated)
Topsoil stripped	295,321.3	320,848	355,288
Topsoil used/spread	44,500	51,295	139,960
Waste Rock	21,883,614	27,353,614	33,468,614
Coal (ROM)	6,636,561	8,939,946	12,098,946
Processing Waste	1,771,320	2,436,735	3,539,735
Product Coal (tonnes)	4,950,700	6,503,211	8,559,211

The total amount of waste rock moved in the AEMR period was 5,470,000.cubic meters.

2.5 MINERAL PROCESSING

Bloomfield Colliery is currently contracted to wash, stockpile and load all coal mined at the Donaldson Mine. All coal is transported from Donaldson in road registered coal haulage trucks. Loads are limited to a maximum of 40t. Once passed through the Bloomfield Coal Handling and Preparation Plant (CHPP), the coal is transported to the dump hopper at the conveyor head by one of two methods:

- Loader and Trucks;
- By direct reclaim.

The conveyor takes the coal from the CHPP area to a rail load out bin and manual loading facility. All Donaldson Coal is then transported from Bloomfield to the port or power stations by train using the existing Bloomfield rail loop. This is consistent with the current MOP as approved by the Department of Mineral Resources (DMR).

2.5.1 Plant Throughput and Saleable Production

Table 4 shows the monthly treatment plant throughput and the saleable production for each month during the reporting period.

TABLE 4: PLANT THROUGHPUT AND SALEABLE PRODUCT.

(tonnes)	Nov 2005	Dec 2005	Jan 2006	Feb 2006	Mar 2006	Apr 2006
Plant Feed	224,114	170,065	83,018	191,412	249,279	135,075
Washed Coal	148,549	108,830	58,677	117,453	166,100	78,459
Sizing	0	0	0	3,595	7,509	4,614

(tonnes)	May 2006	June 2006	July 2006	Aug 2006	Sep 2006	Oct 2006
Plant Feed	223,298	226,357	186,742	215,413	172,790	210,104
Washed Coal	163,402	174,683	121,042	140,303	117,930	141,365
Sizing	0	0	0	0	0	0

Totals for the reporting period were:

(tonnes)	TOTAL
Plant Feed	**2,287,667**
Washed Coal	**1,536,793**
Sizing	**15,718**

2.6 WASTE MANAGEMENT

The following section briefly outlines the waste management systems employed at the Donaldson Coal Mine. All waste is managed in accordance with the Waste Management Plan (Global 2000b).

2.6.1 Tailings and Rejects

Bloomfields Colliery, as part of the contract discussed above, manages all process waste. Both tailings and coarse rejects are disposed of on site at Bloomfields in accordance with their own management plans. This is consistent with the current MOP as approved by the Department of Mineral Resources (DMR).

2.6.2 Sewerage Treatment/Disposal

Currently there are three (3) locations where sewerage is collected and managed. This includes the following areas:

- Cooks Construction administration and bathhouse
- Cooks Construction in-pit crib hut facilities; and
- Donaldson administration facility.

Individual Bio-cycle units services all three (3) areas with the treated water being used to irrigate the gardens and lawn/bushland around the offices. The bio-cycle units are serviced quarterly in accordance with the service schedule recommended by the supplier.

2.6.3 Fuel Containment

A permanent bulk fuel farm facility has been constructed on site in accordance with the appropriate standards. The area is contained by an earthen bund. Approximately 100,000L of diesel fuel is stored on site at any one time. Cooks Construction is responsible for the management of the Fuel Farm facility.

2.6.4 Oil and Grease Containment and Disposal

Oil and grease is delivered to site in 205L drums. A bunded storage pad is used to store full 205L drums. All waste oil collected during servicing is stored in a 5000L-storage tank and routinely collected for recycling. Empty drums are stockpiled inside earthen bunds and collected by a licensed drum recycler on a regular basis.

Oily water is treated by way of an oil-water separator or collected and disposed of by a licensed waste disposal contractor.

2.6.5 Rubbish Disposal

A licensed contractor collects all general rubbish and disposes of it off site at an approved waste facility.

2.6.6 Additional Waste Streams

Table 5 shows the other minor waste streams identified at the Donaldson Mine including the current mode of disposal and treatment as required.

TABLE 5: MINOR WASTE TYPES AND THE MODE OF DISPOSAL/TREATMENT

WASTE TYPE	Method of Disposal or Treatment
Green Waste	Trees are removed for posts, poles, rails and woodchip. Those trees not used are windrowed and buried in the pit ahead of backfilling.
Oil Filters	Oil filters are drained and placed in 205L drums for recycling by a licensed waste disposal contractor.
Redundant Chemicals	Redundant chemicals are taken out of operation, labelled and disposed of by a licensed waste disposal contractor.
Batteries	Batteries are stockpiled on pallets and taken by licensed waste disposal contractors for recycling.
Tyres	All tyres are used on site as bunds and bollards, or are disposed of in the active dump. The Cooks maintenance manager keeps a list of all tyres disposed of in the backfill.
Scrap Metal	All scrap metal is collected in designated skips and recycled by a licensed scrap metal recycler.
Coolant	Coolant is collected in designated drums and disposed of by a licensed waste disposal contractor
Contaminated Soil	All contaminated soil from spills and accidents is taken to a designated area that is bunded. When a sufficient volume of soil is present it is bio-remediated using land-farming techniques.
Parts Wash Degreasers	Parts washers are collected by a licensed waste disposal contractor and recycled and returned to the site for reuse.

2.7 PRODUCT STOCKPILES

Both the main run of mine (ROM) and product stockpiles are located adjacent to the Bloomfields CHPP and as such are specifically managed by Bloomfields. **Table 6** shows the washed and sizing stockpile capacities allocate to Donaldson Coal at Bloomfields.

TABLE 6: STOCKPILE CAPACITY (ROM & SALEABLE COAL).

(tonnes)	ROM	Product
Sizing Coal	10,000	25,000
Washed Coal	20,000	40,000

Donaldson has established two (2) primary ROM coal stockpiles on the Donaldson mine site itself. These stockpiles are used during wet weather or when the Bloomfield's ROM stockpiles are full. The first is located part the way along the coal haul road adjacent to the Cooks Construction workshop (1.2km from pit), while the second is located on the out of pit dump (1.6km from pit). On some occasions in-pit ROM coal stockpiles are established in order to allow sequential mining to proceed when there are delays due to weather or insufficient stockpiling room at Bloomfield's.

2.8 WATER MANAGEMENT

The following section details the water management structures constructed during the reporting period as well as other changes that have been made to water management at the mine. It also includes a brief summary of the water balance records. Information on the water monitoring program and a summary of results is included in section 3.2.3, 3.2.4 and 3.2.5 of this report.

2.8.1 Water Storage Structures

A 400 ML mine water dam was constructed in 2004. This dam is used to store mine water from the pit and is reused for dust suppression.

The 18 ML dam was increased in storage to 40 ML in 2004. This is used for collection of run-off water from rehabilitated areas.

2.8.2 Sediment Control Structures

Work was undertaken to refine the drainage of the hard stand area to the industrial dam. This area then drains to the large mine water storage dam.

The sediment dams alongside the coal haul road have been upgraded and the capacities increased. Maintenance is undertaken on a regular basis to remove sediment build up.

An additional sediment dam was constructed on the eastern boundary of the mine lease during the period.

2.8.3 Water Consumption/Balance.

The site Environmental Manager maintains a site water balance based on water consumed at the mine. It includes recording the amount of water that is available in various water holding structures around the mine. The following chart, **Figure 1**, shows the water consumption for the Donaldson Mine. All water for this monitoring period was obtained from site supplies.

FIGURE 1: WATER CONSUMPTION AND SITE RAINFALL.

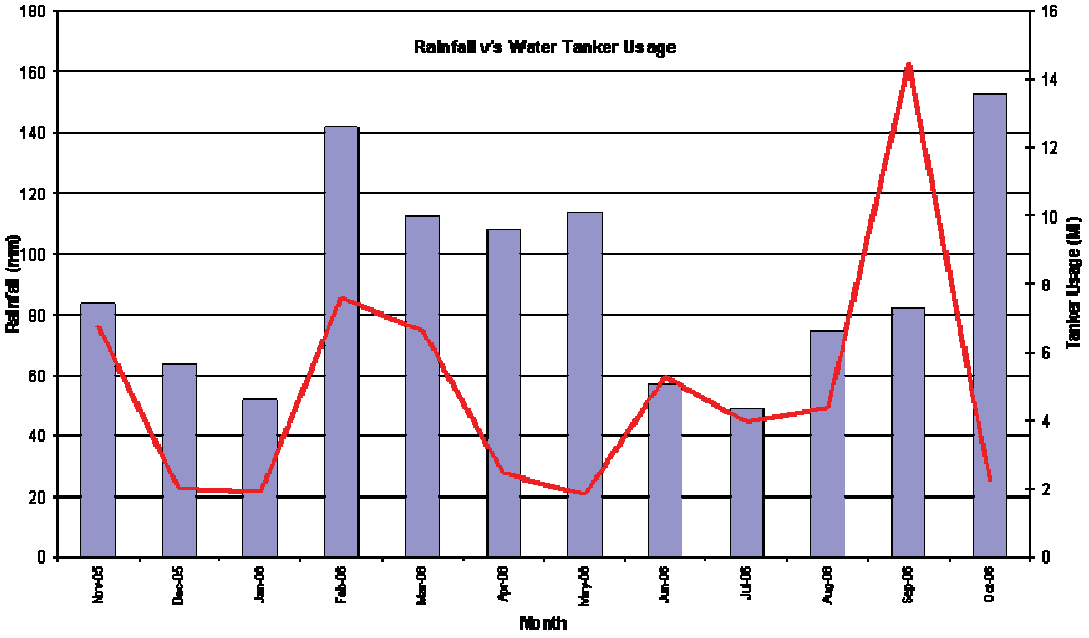


Table 7 shows the volume of water stored on site at the start and end of the reporting period. It also includes reference to the storage capacity available.

Note: Donaldson is a nil discharge mine site for mine waste water and as such does not participate in the Hunter River Salinity Trading Scheme.

TABLE 7: STORED WATER

	Volumes held (cubic metres)		
	Start of Reporting Period	At end of Reporting Period	Storage Capacity
Dirty water	3	4.5	22
Contaminated water*	136	196	441
Controlled discharge water** (salinity trading schemes)	NA	N/A	N/A

Note: *This data assumes that there is no water stored in the pit, where in reality there is generally always an in pit sump established down dip. The sump is capable of storing some water without impacting on the mining operation. The water is used for in-pit dust suppression where it is accessible to the water cart.

**Donaldson Coal does not discharge water under the Hunter River Salinity Trading Scheme.

2.9 HAZARDOUS MATERIAL MANAGEMENT

As the operator of the Mine, Cooks Construction is principally responsible for the management of hazardous and explosive materials. Donaldson Coal has the occasional need to use chemicals (drilling muds, herbicides, etc). All hazardous materials are managed in accordance with the Cooks Construction Site Safety Management System.

2.9.1 Explosives

From the 16th June 2004, Roche Sasol Blasting was contracted to provide blasting services to the mine. Previously blasting was conducted by UEE. Roche Sasol Blasting manages all explosives and other related materials in accordance with the appropriate legislation and industry standards. All explosives, etc are brought to site on an as needs basis, and as such a magazine (or similar) is not required at the site.

2.9.2 Bulk Fuel Storage

All bulk fuels are managed in accordance with the detail described in sections 2.6.3 of this report.

Cooks Construction has constructed a fuel farm facility to store 100,000L of diesel fuel. The fuel farm facility has been approved as a bulk storage facility for hazardous materials.

2.9.3 Chemicals

Both Cooks Construction and Donaldson Coal keep an up to date inventory of Material Data Safety Sheets (MSDS) for all chemical substances used on the site. Prior to a new substance being introduced on the site it has to be approved by the Statutory Mine Manager and is included on the site register.

In addition, copies of Material Data Safety Sheets (MSDS) are generally kept with the chemical when it is being used on site, where this is not the case copies are kept in the on site chemical register.

3 ENVIRONMENTAL MANAGEMENT AND PERFORMANCE

The following section gives an overview of the environmental management performance of the Donaldson Coal Mine during the reporting period. It considers the main environmental aspects of the operation and summarises environmental performance, providing explanation or interpretation for any exceedances. It also considers the adequacy of the control strategies and suggests ongoing improvements where required.

3.1 ENVIRONMENTAL MANAGEMENT STRATEGY (EMS)

During this reporting period work has continued to integrate the Donaldson Coal and Cooks Construction individual company EMS's into one working document for the mine site. A more effective and useable outcome will be achieved by combining the EMS's. The revised EMS has been developed in accordance with the ISO 14001 standard and the additional specific requirements of the Development Consent.

Ongoing workforce training and continuous improvement programs will be undertaken following the development of the revised EMS documentation. Donaldson will manage copies of the documentation however; Cooks will have access to both digital and hard copies of the EMS.

3.1.1 Environmental Risk Assessment

Donaldson Coal previously undertook a detailed Environmental Risk Assessment as part of the recent EMS review. The aim was to identify which activities at the mine present the greatest risk to the environment. **Table 8** lists the principal environmental aspects identified during this process. An internal risk rating score has been assigned to each identified risk as part of a frequency, probability and severity analysis (FPSA). **Table 8** is in accordance with the requirements of the DPI guidelines (EDG03). Control strategies and detail on the environmental performance in all areas encompassing these aspects are included in **section 3.2**.

TABLE 8: SUMMARY OF ENVIRONMENTAL RISKS & CONTROL STRATEGIES.

Environmental Aspect	Potential Environmental Impact	Internal Rating
maintaining conservation areas	Fire	HIGH
overburden hauling & emplacement	Noise	HIGH
coal haulage & stockpiling	acid mine drainage	HIGH
active waste emplacement	acid mine drainage	HIGH
landform & vegetation rehabilitation	Fire	HIGH
blasting overburden	impact on 132kV powerlines	MODERATE
overburden hauling & emplacement	Dust	MODERATE
blasting overburden	noise (overpressure)	MODERATE
vegetation clearing	disturb or destroy endangered flora & fauna	MODERATE
hazardous Goods Storage	hydrocarbon, oil spill	MODERATE
excavation O/B & coal	Dust	MODERATE
maintaining conservation areas	land disturbance – unauthorised	MODERATE
coal haulage & stockpiling	Dust	MODERATE
Mobile fuel truck	hydrocarbon spill from vehicle incident	MODERATE
stripping topsoil	disturb or destroy cultural heritage sites	MODERATE
blasting overburden	Vibration	MODERATE
excavation O/B & coal	Noise	MODERATE
water distribution/pumping	broken pipeline causing leakage/siphoning	MODERATE
coal processing & loader	Noise	MODERATE
timber recovery	disturb or destroy cultural heritage sites	MODERATE
blasting overburden	Dust	MODERATE
timber recovery	disturb or destroy endangered flora & fauna	MODERATE
stripping topsoil	Dust	MODERATE
excavation O/B & coal	hydrocarbon spill (burst hose)	MODERATE
overburden hauling & emplacement	hydrocarbon spill (burst hose)	MODERATE
H/W water storage's (above ground)	failure of dam wall (10 ML) resulting in rapid release	MODERATE
H/W water storage's (below ground)	seepage or overflow	MODERATE
servicing & Maintenance	hydrocarbon, oil spill	MODERATE
coal haulage & stockpiling	Noise	MODERATE
rejects & tailings emplacement	off-site water contamination	MODERATE
stripping topsoil	Noise	MODERATE
vegetation clearing	disturb or destroy cultural heritage sites	MODERATE
landform & vegetation rehabilitation	erosion of landform and release of sediment	MODERATE
waste Management	hydrocarbon, oil or chemical spill. Consumables etc	MODERATE
maintaining conservation areas	land contamination by rubbish	MODERATE
overburden hauling & emplacement	exhaust emissions	MODERATE
using water-cart for dust suppression	repeated application to road surfaces	MODERATE
involving water importing from Bloomfields	pipe burst and leakage of very saline water	MODERATE
active waste emplacement	Visual	MODERATE
exploration drilling	disturb or destroy cultural heritage sites	MODERATE
excavation O/B & coal	loss of topsoil	MODERATE
stripping topsoil	hydrocarbon spill from burst hose or re-fuelling	MODERATE
vegetation clearing	hydrocarbon spill from burst hose or re-fuelling	MODERATE
active waste emplacement	Dust	MODERATE
coal haulage & stockpiling	hydro-carbon spill from vehicle roll-over	MODERATE
coal processing & loader	Dust	MODERATE
coal processing & loader	washery water spill/leak. Impact on water quality	MODERATE
stripping topsoil	loss of topsoil (quantity)	MINOR
stripping topsoil	erosion and sediment discharge	MINOR

timber recovery	hydrocarbon spill from burst hose or re-fuelling	MINOR
exploration drilling	hydrocarbon spill from burst hose or re-fuelling	MINOR
stripping topsoil	loss of topsoil (quality)	MINOR
drilling overburden	Noise	MINOR
drilling overburden	Dust	MINOR
drilling overburden	hydrocarbon spill	MINOR
coal haulage & stockpiling	spontaneous combustion	MINOR
rejects & tailings emplacement	contaminated land	MINOR
Vehicle parts washing	hydrocarbon, oil spill (no fixed location)	MINOR
vegetation clearing	Noise	MINOR
exploration drilling	water quality (drilling mud, additives)	MINOR
vegetation clearing	Dust	MINOR
vegetation clearing	erosion and sediment discharge	MINOR
timber recovery	Noise	MINOR
timber recovery	Dust	MINOR
timber recovery	erosion and sediment discharge	MINOR
exploration drilling	Noise	MINOR
exploration drilling	Dust	MINOR
exploration drilling	erosion and sediment discharge	MINOR

3.2 ENVIRONMENTAL MANAGEMENT CONTROLS

This section documents the implementation and effectiveness of control strategies and environmental performance for a range of environmental aspects as prescribed by the MR guidelines. Summary tables of all monitoring data are included for consideration by the MR. Detailed copies of all environmental data collected by Donaldson have not been included in the present report but are however available upon request.

3.2.1 Meteorological Monitoring

An automatic weather station has been in operation at the site since 3rd December 1999. The station is supplied and serviced by Holmes Air Sciences. The station is a Unidata system with instrumentation installed to measure solar radiation (W/m^2), temperature (°C), wind speed (m/s), wind direction and rainfall (mm). Data from the Unidata station was recorded continuously and reported as ten-minute averages. In May 2001 the monitoring data was integrated with a Citect operating system to provide real time and meteorological data and trending functions. This feature has allowed operational staff the ability to make up-to-date decisions about the influence of meteorological conditions on mining operations. **Figure 2** shows a typical screen that is displayed both in the Donaldson Coal Communication's office and the Shift Foreman office.

Rainfall

Table 9 details the rainfall for the 2006 AEMR reporting period. A total of 509 mm was recorded during the 2006 AEMR reporting period, less than the corresponding 2005 AEMR period (740.2mm) and significantly less than the historical average (937mm). **Table 9** also includes a comparison between the historical monthly average rainfall from the Bureau of Meteorology site at East Maitland (site 061034) and the rainfall recorded at the Donaldson Weather Station since January 2000.

FIGURE 2: WEATHER STATION SCREEN.

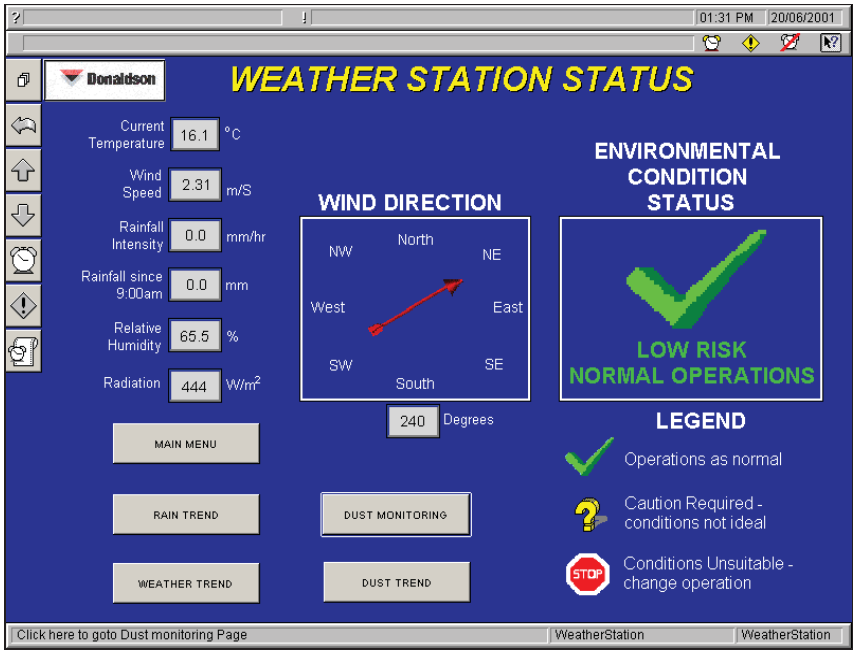


TABLE 9: COMPARISON BETWEEN MONTHLY RAINFALL DURING THE 2006 AEMR REPORTING PERIOD, PREVIOUS REPORTING PERIODS AND HISTORICAL AVERAGE.

Period	Average Monthly Rainfall (mm)												
	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Historical Average	94	98	113	84	71	84	64	54	57	63	67	88	937
2000	61	32	279	146	45	24	27	31	33	47	106	32	863
2001	46	169	193	114	244	3.4	63	22	12	31	91	38	1026.4
2002	48	281	184	66.4	62.1	30	30	21	17.4	18.8	56.2	149.2	964.1
2003	6	90	22.2	77	135	13.2	43	27.4	0	63.2	137.6	39	653.6
2004	86	176.6	80	33.6	17.4	9.4	15.4	43.1	61.2	136	77.4	69.8	805.9
2005	64.4	95.8	127.8	57.4	61.8*	56.8	7.2	0.8	37.0	84.0	**22.8**	**9.6**	625.4
2006	**29.8**	**47.4**	**63.6**	**4.6**	**7.8**	**43.8**	**42.6**	**49.2**	**162.4**	**25.4**			476.6

Note: Bold results are for this monitoring period.
* Data set not complete

Wind Speed and Direction

Wind speed and direction data have been collected from the meteorological station at Donaldson Coal Mine since December 1999. These data are presented in the form of windrose charts. Windrose charts for each month and season within the 2005-6 reporting period are included in **Appendix 5**. A windrose chart for the entire annual period is also included in **Appendix 5**.

The winds display a high degree of seasonality. Winds typically blow from the south to east quadrant from November to March and from the west to north quadrant from April to August.

3.2.2 Air Pollution

There are two principle sources of air pollution from the Donaldson Coal Mine. The first is airborne dust that comes from the mining activities (measured as depositional dust, PM_{10} and Total Suspended Particulates (TSP). The second source is from the combustion of diesel fuel, which is measured as $PM_{2.5}$ particles.

Donaldson operates the following dust monitoring equipment:

- one High Volume Air Sampler (HVAS) measuring TSP and
- two HVAS measuring PM_{10};
- two continuous DustTrak monitors measuring PM_{10};
- eleven Depositional Dust Gauges measuring insoluble solids; and
- one GRIMM monitor measuring PM_{10} and $PM_{2.5}$ on two campaign events.

Refer to **Appendix 2** for dust monitoring locations. It is noted that measurements taken at any of these locations will include all background air pollution relevant to those locations, as well as any contribution occurring from the Donaldson Coal Mine.

Control Strategy:

The Donaldson Air Quality Management Plan (Holmes, 2000) details the range of measures employed by Donaldson to control airborne dust. These measures include:

- Maintenance of an adequate distance between the mine and neighbouring residents;
- Minimisation of disturbance of land to only what is required by mining activities;
- Minimisation of the distance travelled by hauling overburden the shortest distance possible;
- Utilisation of mine water for dust suppression on roads, stockpiles and work areas; and
- Monitoring of real time weather conditions and alter or cease the offending operations when dust is becoming difficult to control.

Environmental Performance:

No dust complaints were made during the AEMR reporting period.

A review of the dust monitoring data for the period suggests that there has been no major change in the regional dust levels as a result of mining activities compared to the previous reporting period. Seasonal variations are evident (ie. summer versus winter) and in some cases high readings have been recorded on the DustTrak's and the Depositional Dust Gauges. These events are related to

activities adjacent to the monitoring site (other than mining) including, but not limited to, dirt roads, bushfires and lawn mowing.

A summary of the monitoring data for the reporting period is included here for reference.

Depositional Dust Gauges

Results were recorded for 123 monthly samples at eleven (11) dust gauges out of a possible total of 132. Four results were not obtained due to broken funnels at the monitoring gauge and five were judged to be excessively contaminated with bird dropping or ruled invalid, refer **Table 10**.

All gauges were in compliance with the Donaldson Air Quality Management Plan, with annual average insoluble solid results for each gauge below the criteria of 4g/m^2.month. Results are displayed in **Table 11**. Results are generally similar to previous year's results and indicate no major increase in dust emissions.

TABLE 10: MISSING DEPOSITIONAL DUST GAUGE DATA.

Location	Date	Reason for exclusion
DG1	25/10/2005- 24/11/2005	Excess Bird Droppings
DG8	24/11/2005- 22/12/2005	Excess Bird Droppings
DG7	22/12/2005- 23/1/2006	Excess Bird Droppings
DG10	22/12/2005- 23/1/2006	Excess Bird Droppings
DG9	23/1/2006- 22/2/2006	Broken Funnel- Vandalism
DG4	24/4/2006- 25/5/2006	Invalid Particles too large to be wind blown
DG9	24/4/2006- 25/5/2006	Broken Funnel- Vandalism
DG9	28/7/2006-28/8/2006	Broken Funnel- Vandalism
DG9	28/8/2006- 26/9/2006	Broken Funnel- Vandalism

TABLE 11: CONCENTRATION MONITORING - DEPOSITIONAL DUST GAUGES

Sample Site	No. Samples Required	No. samples collected and analysed	Maximum Insoluble Solids (g/m^2.month)	Minimum Insoluble Solids (g/m^2.month)	Mean Insoluble Solids (g/m^2.month)
DG1	12	11 ^{o}	2.2	0.3	1.1
DG2	12	12	3.2	0.3	1.4
DG3	12	12	2.3	0.7	1.4
DG4	12	11	3.3	0.5	1.4
DG5A	12	12	2.6	0.4	1.1
DG6	12	12	3.5	0.6	1.5
DG7	12	11 ^{o}	2.3	0.7	1.1
DG8	12	11 ^{o}	4.1	0.8	2.1
DG9	12	8$^+$	1.6	0.6	1.1
DG10	12	11^o	7.0	0.6	2.1
DG11	12	12	3.9	0.6	1.7

* Several high results were recorded in dust gauges DG8 and DG10. There were no unusual dust generating operations on site that could have contributed to the high results and it is possible that insect, vegetation or bird dropping contamination may have impacted on the results. Field observations suggested contamination.
^{o} Samples contained excessive bird droppings.
$^+$ Broken or missing funnel and or bottle.

High Volume Air Samplers

This section deals with the high volume air samplers located at "Bartter Chicken Farms" (now owned by the Catholic Diocese of Maitland and Newcastle) site and the Beresfield Golf Course. Two sets of measurements have been performed during the reporting period, *viz*. PM_{10} (particulate matter of diameter less than 10 μm) and TSP (total suspended particulate matter). A summary of these measurements is included below.

PM_{10}

The annual average PM_{10} at both monitoring sites was below the annual average maximum criteria of 30ug/m^3. The annual average PM_{10} at the Beresfield Golf Course and at the "Bartter Enterprise" location has remained stable compared to the previous AEMR reporting period. Results are displayed in **Table 12**.

All PM_{10} measurements recorded at the "Bartter Enterprise" location satisfied the 24-hour NEPM maximum criteria of 50 μg/m^3. Only two of the 24 hour PM_{10} measurements recorded at the Beresfield Golf Course location exceeded this criteria and this indicates similar air quality at both locations. By comparison with the last reporting period, PM_{10} values exceeded the NEPM criteria on 0 and on 1 occasion at the "Bartter Enterprise" and Beresfield Golf Course locations respectively. The two PM_{10} results, exceeding the NEPM 24hr criteria, at the Beresfield Golf Course was recorded on the 29th December 2005 (54 ug/m^3) and 13th December 2006 (54 ug/m^3). Predominant winds on the dates were slight from the W-NW overnight and stronger SE during the day and evening. The Beresfield Golf Course is located E to NE of current mining operations and any dust emissions from Donaldson Coal would have resulted in minimal impact under these wind conditions. The higher dust levels are most likely due to localised effects and have not been attributed to the mining activities of Donaldson Coal. Generally PM_{10} levels at both sites were similar this monitoring period compared to the last monitoring period.

TABLE 12: DETAILS OF CONCENTRATION MONITORING (PM_{10} HIGH VOLUME AIR SAMPLERS).

Sample Site	No Samples Required	No samples collected and analysed	Maximum PM_{10} Value (μg/m^3)	Minimum PM_{10} Value (μg/m^3)	Mean PM_{10} Value (μg/m^3)
Beresfield Golf Course	61	61	54	8	22.1
"Bartter Enterprise"	61	61	43	2	16.8

Total Suspended Particulates

TSP measurements were performed at the "Bartter Enterprise" location, using a high volume air sampler. Details of these measurements are included in **Table 13**.

The annual average TSP result at "Bartter Enterprise"s (34 µg/m^3) was well below the annual average criteria of 90 µg/m^3. While there are no specified criteria for a 24-hr TSP maximum in the Donaldson consent or EPA licence, all TSP results were well below the US EPA short term good air quality criteria of 260 µg/m^3.

In general, the results recorded during this reporting period are similar to the corresponding measurements of the 2005 AEMR reporting period indicating a low dust impact from mining operations. The ratio of PM_{10} to TSP over the reporting period was 50%, which was identical to last period.

TABLE 13: CONCENTRATION MONITORING (TSP HIGH VOLUME SAMPLERS).

Sample Site	No Samples Required	No samples collected and analysed	Maximum TSP Value (µg/m^3)	Minimum TSP Value (µg/m^3)	Mean TSP Value (µg/m^3)
"Bartter Enterprise"	61	61	83	8	34

Table 14 displays the data capture rate for the three high volume air sampler units during the period. Data capture has improved compared with the last reporting period due to less equipment faults and power failures.

TABLE 14: HIGH VOLUME SAMPLER DATA CAPTURE RATE.

Monitoring Location	Data Capture Rate (%)
Bartter (PM_{10})	100
Bartter (TSP)	100
Beresfield, Golf Course (PM_{10})	100

DustTrak Monitors

Donaldson operates two continuous DustTrak air quality monitors. One has been permanently located on a property owned and occupied by "Bartter Enterprise"s. The second unit is designed to be mobile and as such rotates to various key locations around the mine as required. The mobile DustTrak has been located on Weakleys Drive (east of the mine site) throughout the entire duration of this reporting period. This location is preferred as it is close to the mine and is located at the residence of one of the Community Consultative Committee (CCC) members. Both units are interrogated remotely from the mine by way of mobile phone telemetry. The results are logged and stored on the mine Environmental Monitoring computer system.

Table 15 summarises the DustTrak monitoring data and the data capture rate. The measurements of PM10 by optical methods (such as the DustTrak monitors) are known to be particularly sensitive to rainfall or high humidity events. Monthly inspections of the DustTrak monitors and regular servicing of the instruments assist with reducing occasions when the measurements become unstable or drift from sensible values. It was considered appropriate to exclude non-valid data from the calculations of the highest 24-hour average PM_{10}, annual average PM_{10} and the lowest 24-hour average PM_{10}. Despite this, the valid data recovery rate, refer **Table 15**, upon which the PM_{10} averages are based are still substantial.

In some instances the assessment of whether collected data was valid or not was difficult to determine. Obvious erroneous measurements included negative values, extremely high values persisting for extended periods of time (ie. continuously for days) and data, which exhibited no variation for, extended periods of time. Holmes Air Sciences determined data averaging and validity.

The monthly air quality monitoring reports provided to Donaldson Coal by Holmes Air Sciences provide graphs of all the data collected, including valid and non-valid data.

TABLE 15: DETAILS OF DUSTTRAK CONTINUOUS MONITORING

Site	Data collection	Total data recovery (%)	Valid data recovery (%)	Highest 24-hour average PM_{10}	Annual average PM_{10}	Lowest 24-hour average PM_{10}
Weakleys Drive	Continuous	91.6	81.6	294	15.6	1.2
"Bartter Enterprise"	Continuous	94.8	83.7	89	17.9	1.1

Note: Data in this table is for the annual reporting period 1 November 2005 to 31 October 2006 as reported by Holmes Air Sciences.

The results from DustTrak monitoring are comparable to those obtained from the PM10 High Volume Air Sampling and the annual averages were again, below the maximum NEPM annual average criteria.

$PM_{2.5}$ Air Quality Monitoring

$PM_{2.5}$ dust monitoring was undertaken by a GRIMM monitor for two campaign events during this reporting period at the Bartter (Blackhill) site. Monitoring was conducted continuously over the period 10th February to 24th February 2006 and the 3rd August 2006 to 10th August 2006. 10-minute averages were obtained and are provided in **Figures 3 and 4**.

Data collected during the February and August 2006 sampling events showed that PM_{10} measured at the site consisted of approximately 32% and 29% $PM_{2.5}$ particles respectively. This is similar to previous recorded results and is a relatively low fraction. It is typical of a semi-rural area such as where the particulate matter is likely to be crustal (dust particles) rather than from the combustion process such as the burning of fuel in motor cars. There is however likely to be some contribution from motor cars due to the proximity of major roads to the monitoring location.

Figure 3: PM10 and PM2.5 chart for the period 10th February 2006 to 24th February 2006

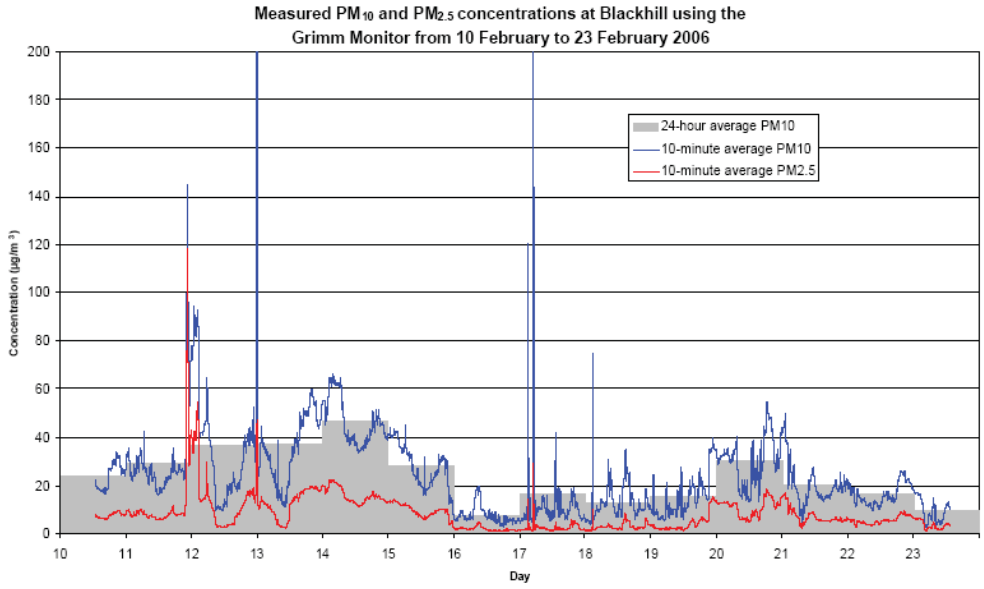
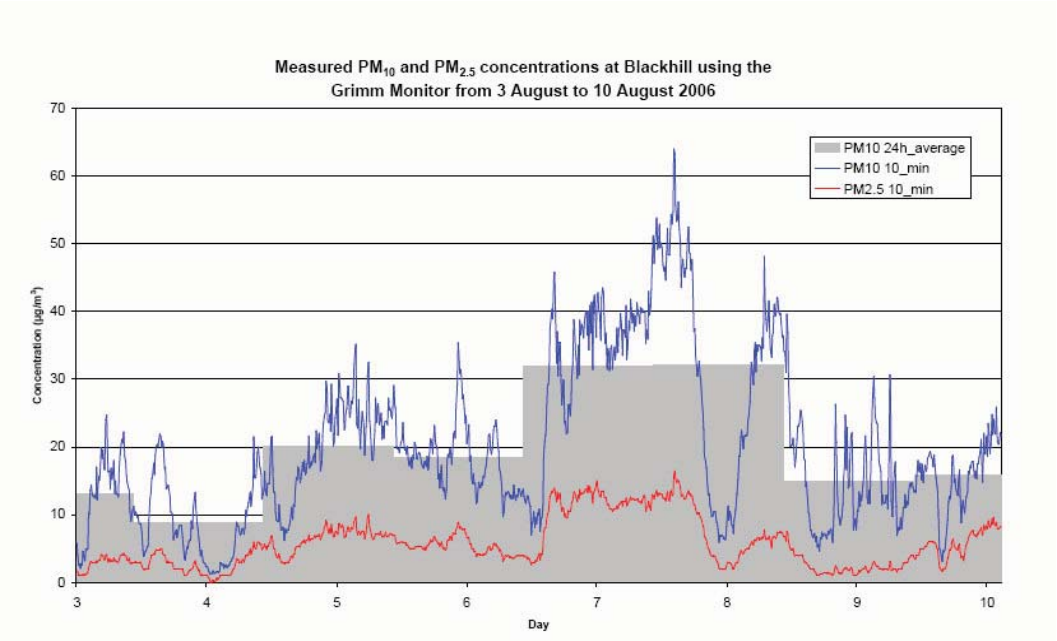


Figure 4: PM10 and PM2.5 chart for the period 3rd August 2006 to 10th August 2006



3.2.3 Erosion and Sediment Control

The Erosion and Sediment Control Plan (Global Soil Systems, 2000) details the methods for erosion and sediment control at the site. The works are progressively constructed in conjunction with the advancing mining operations.

Since the last inspection the following additional works have been completed at the Donaldson Mine.

- Routine maintenance of sediment dams A, B and C alongside the coal haul road;
- Drainage lines on the rehabilitated areas were regraded and pasture seeded to minimise scouring and assist in sediment removal. Drainage design was checked immediately after construction to assess consistent grade and ensure they were free draining. This is now standard practice on site;
- During the reporting period, the coal haulroad was widened to the north for approximately 200m. Table drains were reestablished and grassed on the northern area and sediment control structures were installed.
- Ongoing minor works, including but not limited to, silt fences, hay bales and seeding using hybrid pasture grass species such as rye-corn, silk sorghum and oats; and
- Regular inspections of silt fencing is undertaking around the site are undertaken and in particular following significant rainfall events.

Graded banks and waterways will continue to be used to divert all water from the reshaped and revegetated areas prior to release from the site. Where possible, banks will be built with a stable outlet. If this can not be achieved in the short term, or if necessary to drop the banks short, the downstream consequences will be assessed and if unacceptable, an alternate design will be adopted.

Control Strategy:

The following control measures are employed at the Donaldson in order to control erosion and sediment leaving the mine:

- Minimal disturbance (only what is required for mining);
- Diversionary works to separate clean and sediment laden waters;
- Sediment control dams;
- The employment of sediment fencing and hay bales to provide interim protection; and
- Revegetation as soon as is practical

Environmental Performance:

There were no complaints received by the mine relating to sediment control issues. Routine water quality monitoring undertaken at locations upstream and downstream of the mine is used to assess the performance of the sediment retention structures. Total Suspended Solids (TSS) are reported as an indicative measure of the effectiveness of sediment control. **Table 16** includes TSS data collected during the 2006 AEMR reporting period. Where necessary flocculates have been used in the past to precipitate sediment from solution and ensure an appropriate water quality.

A program of checking all sediment control structures is employed following rainfall events greater than 20mm in any one 24 hr period. Any repair works that are required (eg. clean out sediment dams or re-erect silt fencing etc) are undertaken as soon as is practical after the rainfall event.

3.2.4 Surface Water

The Water Management Plan (Perrens, 2000) details the measures employed by Donaldson Coal to ensure protection of surface water on and around the mine site. Surface monitoring has been ongoing since June 2000. A plan showing the location of the water monitoring sites appears in **Appendix 2**. Ecowise Environmental (EE) is engaged by Donaldson to undertake routine sampling and analysis of six (6) permanent surface water stream monitoring locations. Grab samples are also taken opportunistically from various other locations around the mine area as required (sediment dams and mine water storage dams). The surface stream water monitoring sites include:

- Four Mile Creek Upstream (EM1);
- Four Mile Creek Downstream (EM2);
- Scotch Dairy Creek Upstream (EM3);
- Scotch Dairy Creek Downstream (EM4);
- Weakley's Flat Creek Downstream (EM5); and
- Weakley's Flat Creek Upstream (EM6).

Samples collected from the six existing stream sites are analysed for Electrical Conductivity (EC), pH, Total Dissolved Solids (TDS), Total Suspended Solids (TSS) and Sulfates (SO_4), on a monthly basis. A full suite analysis is also carried out on a quarterly basis and includes analysis for EC, pH, TDS, SS, SO_4, Calcium (Ca), Magnesium (Mg), Sodium (Na), Potassium (K), Chloride (Cl), Fluoride (Fl), Arsenic (As), Aluminium (Al), Barium (Ba), Cadmium (Cd), Cobalt (Co), Copper (Cu), Chromium (Cr), Iron (Fe), Manganese (Mn), Lead (Pb), Zinc (Zn), Total Alkalinity as $CaCO_3$, Nitrates and Phosphates (total). Surfactants (detergents) and Total Petroleum Hydrocarbons (TPH) are included in the suite of analysis for the industrial area sump or as required.

The out of pit sediment dam is sampled on a monthly basis to monitor any possible Acid Mine Drainage from the Out of Pit Dump. In this monitoring period it was sampled on 12 occasions.

Rising Stage Samplers (RSS) have been installed upstream and downstream of the site. These samplers collect water quality information during flow events with sample bottles located upward from the streambed at 0.2m intervals to a maximum of 1m. Samples are collected from these sites as soon as possible after flows, however this is limited to some extent by access to the sites during extended wet periods.

In addition to the physical and chemical water quality work, biological monitoring (macroinvertebrates) has been ongoing as part of the environmental impact assessment. The program consists of:

- A pre-mining baseline survey;
- A construction survey; and
- Twice yearly operational surveys.

One monitoring survey was completed during the reporting period, in April 2006.

Control Strategy:

The following control measures are employed at the Donaldson in order to ensure an appropriate level of protection to surface water on and around the mine site (there are a number of similarities with the Erosion and Sediment Control Plan as detailed above):

- Minimal disturbance;
- Source separation in order to separate water of differing quality;
- Collection and containment of mine water for dust suppression;
- Grey water and sewerage is treated by bio-cycle technology; and
- Water from workshop and washdown areas (to be constructed) is directed through a simple oil/water separator prior to the Industrial Area dam and then via a channel drain to the mine water storage dam.

Environmental Performance:

There were no water-related complaints received during the 2006 AEMR reporting period. In addition, monthly water monitoring results were routinely reviewed to determine whether there were any changes as a result of activities at the mine.

Chemical & Physical Monitoring:

A summary of three key parameters, required by the DEC Pollution Control Licence, for the reporting period as well as the pre-mining baseline is included in **Table 16** for reference.

Mean pH values for all stream-monitoring locations as recorded on a monthly basis are comparable to the pre-mining pH levels. The average pH of most sites is within the recommended ANZECC Guideline (pH 6.5 – 9.0) for fresh and marine waters for the protection of aquatic ecosystems. The Out of Pit sediment dam indicated lower than normal pH. This water was treated with a lime buffer at the overflow point and the monitoring program did not detect low pH impacts in creek systems downstream. As such, it appears that the activities of Donaldson Coal in this reporting period have not affected the pH of the surrounding stream environments.

The corresponding mean EC values in **Table 16** are also comparable to the pre-mining values, except in three cases. Scotch Dairy Creek Upstream, Weakleys Flat Creek Upstream and Downstream annual average EC results were higher than pre-mining results. These higher results may be attributed to ongoing drought conditions throughout the region. In any case, both upstream and downstream results are high along both watercourses suggesting that Donaldson is not having any significant impact on EC levels. EC results in the Out of Pit Sediment dam were moderate with a mean of 1239uS/cm, similar to results in Weakleys Flat and Scotch Dairy Creeks systems.

The annual mean TSS values at monitoring locations were generally higher than the respective pre-mining levels. The TSS in the out of Pit Sediment dam was generally low with a mean of 17mg/L, a similar result compared to the 13mg/L obtained in the last annual monitoring period.

TABLE 16: **SUMMARY OF KEY WATER QUALITY PARAMETERS COMPARED WITH PRE-MINING DATA.**

Sample Site	No Samples Required	No samples collected and analysed	Highest Sample Value			Lowest Sample value			Mean Sample Value		
			pH	EC	TSS	pH	EC	TSS	pH	EC	TSS
Four Mile Ck Upstream	12	10	7.1	710	113	6.4	90	5	6.73	237	30
Pre-mining	**---**	**---**	***7.44***	***522***	***90***	***6.7***	***265***	***180***	***7.06***	***276***	***32***
Four Mile Ck Downstream	12	11	7.7	170	24	6.9	100	2	7.28	128	4
Pre-mining	**---**	**---**	***7.73***	***265***	***32***	***6.4***	***120***	***2***	***7.15***	***175***	***8***
Scotch Dairy Creek Upstream	12	9	6.6	1280	384	5	430	14	5.93	699	113
Pre-mining	**---**	**---**	***6.81***	***200***	***47***	***5.90***	***71***	***9***	***6.33***	***210***	***22***
Scotch Dairy Creek Downstream	12	7	6.8	290	43	5.2	120	10	6.21	223	22
Pre-mining	**---**	**---**	***6.8***	***270***	***1283***	***5.8***	***145***	***12***	***6.43***	***180***	***271***
Weakleys Flat Ck Upstream	12	11	7.6	2350	920	6.5	160	2	7.14	1057	145
Pre-mining	**---**	**---**	***7.49***	***310***	***3***	***6.6***	***200***	***1***	***7.15***	***249***	***2***
Weakleys Flat Ck Downstream	12	9	6.7	1990	264	5	340	3	5.92	693	45
Pre-mining	**---**	**---**	***7.28***	***546***	***17***	***6.4***	***230***	***3***	***7.01***	***419***	***8.2***
Out of Pit Sediment Dam	*12*	*12*	*5.1*	*2380*	*60*	*3.6*	*545*	*2*	*4.1*	*1239*	*17*
Pre-mining	**---**	**---**	***---***	***---***	***---***	***---***	***---***	***---***	***---***	***---***	***---***

Biological Monitoring

Assessment of stream fauna is used to assess areas of environmental stress through the diversity of the macroinvertebrate population and the presence of pollutant sensitive or pollutant tolerant species. Macroinvertebrate monitoring was undertaken on the 11th April 2006. Six sites are targeted on the three major tributaries traversing the mine site. **Table 17** includes the results for the last eleven (11) surveys as well as the baseline survey.

It is observed that the streams examined support a relatively diverse ecology including species typical of the Hunter Region, and some sensitive families of invertebrates. The predominance of mildly impaired invertebrate species is indicative of fair water quality in the streams. The majority of AUSRIVAS scores for the sites included in this report are reasonable, refer to **Table 17**.

Overall, there is no indication of obvious deterioration in water quality in the downstream sites, which could be directly attributed to intermediate mining activity of Donaldson (Tuft and Associates, 2005a and 2005b). Individual site conclusions are provided by Tuft and Associates (2005a and 2005b) and these reports may be supplied upon request.

Table 17: **MACROINVERTEBRATE MONITORING (SPRING/AUTUMN 2001-2006) RESULTS COMPARED WITH BASELINE.**

	Four Mile Upstream	Four Mile Downstream	Scotch Dairy Upstream	Scotch Dairy Downstream	Weakleys Flat Downstream	Weakleys Flat Upstream
DIVERSITY						
Autumn 2006	**16**	**23**	**13**	**18**	**21**	**16**
Spring 2005	19	24	23	23	15	26
Autumn 2005	11	27	20	21	12	25
Spring 2004	17	25	12	15	10	30
Autumn 2004	17	31	17	31	22	34
Spring 2003	17	27	17	13	16	28
Autumn 2003	14	28	19	27	27	33
Spring 2002	21	24	12	20	22	25
Autumn 2002	22	19	33	27	24	34
Spring 2001	37	30	NR	30	26	31
Autumn 2001	20	30	18	25	36	31
BASELINE	30	36	39	32	39	44
SIGNAL INDEX						
Autumn 2006	**6.4**	**4.8**	**4.7**	**5.6**	**4.4**	**5.7**
Spring 2005	5.7	5.7	5.1	6.0	5.7	4.3
Autumn 2005	5.2	5.6	5.2	6.2	4.6	4.4
Spring 2004	5.7	5.5	5.2	4.9	4.6	5.0
Autumn 2004	6.0	5.5	5.0	4.9	5.4	5.0
Spring 2003	6.0	5.9	4.6	5.7	5.5	5.3
Autumn 2003	6.1	5.7	5.2	5.5	4.6	5.0
Spring 2002	6.0	5.7	4.0	5.9	5.7	5.4
Autumn 2002	5.7	5.4	5.2	6.0	5.5	5.3
Spring 2001	5.8	5.8	NR	5.6	5.7	5.4
Autumn 2001	5.6	5.3	5.3	5.6	5.3	5.0
BASELINE	6.0	5.7	5.7	5.6	5.5	5.4
AUSRIVAS						
Autumn 2006	**0.54 (Band B)**	**0.49 (Band B)**	**0.48 (Band B)**	**0.69 (Band B)**	**Out of Range**	**0.68 (Band B)**
Spring 2005	0.19(Band C)	0.68 (Band B)	0.68 (Band B)	0.48 (Band C)	0.60 (Band B)	0.58 (Band B)
Autumn 2005	0.52 (Band B)	0.31 (Band C)	0.48 (Band B)	0.6 (Band B)	0.42 (Band C)	0.45 (Band C)
Spring 2004	0.78 - Band B	0.58 - Band B	0.48 – Band C	0.88 - Band A	0.58 – Band B	0.69 – Band B
Autumn 2004	0.55 – Band B	0.97 – Band A	0.95 – Band A	0.68 Band B	0.93 – Band A	0.79 – Band B
Spring 2003	0.69 – Band B	0.73 – Band B	0.6 – Band B	1.06 – Band A	0.9 – Band A	0.78 – Band B
Autumn 2003	0.69 – Band B	0.73 – Band B	0.6 – Band B	1.06 – Band A	0.9 – Band A	0.78 – Band B
Spring 2002	0.67 - Band B	0.57 - Band B	0.29 – Band C	0.59 – Band B	0.58 – Band B	0.49 - Band C
Autumn 2002	0.87 – Band A	0.93 – Band A	1.03 – Band A	1.09 – Band A	0.78 – Band B	103 - Band A
Spring 2001	1.08 – Band A	0.58 – Band B	NR	0.9 – Band A	0.96 – Band A	0.69 – Band B
Autumn 2001	0.68 – Band B	0.61 – Band B	0.83 – Band A	0.95 – Band A	0.87 – Band A	0.87 – Band A
BASELINE	0.93 – Band A	1.04 – Band A	1.08 – Band A	0.82 – Band A	0.86 – Band A	0.82 – Band A

At each site a detailed field observation sheet was completed covering riparian (stream bank) vegetation, stream geomorphology, visual characteristics and odour. The RCE was calculated following the assessment which evaluates the condition of the:

- Adjacent land
- Banks
- Channel & bed (includes in-stream vegetation and algae); and
- Riparian vegetation

Table 18 provides a summary of the RCE ranking results for the last eleven (11) surveys as well as the baseline survey.

TABLE 18: RCE RANKING FOR ALL MONITORING SITES (2000-2006).

Site	Date of Collection	Bank Condition Scores	Bank Condition Rating	Bed Condition Score	Bed Condition Rating	Stream Condition (RCE)	RCE Rating
Four Mile Ck U/S	26/09/00	22	Excellent	10	Good	45	Excellent
	19/03/01	16	Good	6.5	Fair	45	Excellent
	11/10/01	16	Good	9	Good	40	Good
	15/04/02	12	Fair	7	Fair	34	Fair
	9/10/02	18	Good	9	Good	43	Good
	17/04/03	19	Excellent	8	Fair	43	Good
	10/10/03	16	Good	11	Excellent	43	Good
	1/4/04	19	Excellent	9	Good	48	Excellent
	6/10/04	14	Good	8	Fair	40	Good
	15/4/05	15	Good	7	Fair	40	Good
	27/9/05	15	Good	9	Good	41	Good
	11/4/06	**15**	**Good**	**10**	**Good**	**41**	**Good**
Four Mile Ck D/S	26/09/00	21	Excellent	6	Poor	39	Good
	19/03/01	15	Good	7	Fair	39	Good
	11/10/01	16	Good	7	Fair	37	Good
	15/04/02	16	Good	6	Poor	36	Fair
	9/10/02	20	Excellent	9	Good	45	Good
	17/04/03	19	Excellent	10	Good	45	Good
	10/10/03	16	Good	11	Excellent	43	Good
	1/4/04	17	Good	10	Good	44	Good
	6/10/04	14	Good	10	Good	41	Good
	15/4/05	14	Good	10	Good	39	Good
	27/9/05	15	Good	10	Good	40	Good
	11/4/06	**15**	**Good**	**8**	**Fair**	**38**	**Good**
Scotch Dairy Ck U/S	26/09/00	21	Excellent	8	Fair	39	Good
	19/03/01	15	Good	7	Poor	37	Good
	11/10/01	NR	NR	NR	NR	NR	NR
	15/04/02	12	Fair	9	Good	37	Good
	9/10/02	16	Fair	9	Good	43	Good
	17/04/03	17	Good	6	Poor	36	Fair
	21/10/03	15	Good	5	Poor	36	Fair
	1/4/04	19	Excellent	5	Poor	40	Good
	6/10/04	14	Good	5	Poor	36	Good
	15/4/05	14	Good	5	Poor	34	Fair
	27/9/02	14	Good	5	Poor	33	Fair
	11/4/06	**13**	**Good**	**5**	**Poor**	**33**	**Fair**
Scotch Dairy Ck D/S	26/09/00	20	Excellent	5	Poor	39	Good
	19/03/01	17	Excellent	7	Fair	39	Good
	11/10/01	16	Fair	11	Excellent	42	Good
	15/04/02	15	Fair	8	Fair	40	Good
	9/10/02	16	Fair	5	Poor	34	Fair
	17/04/03	17	Good	5	Poor	35	Fair
	21/10/03	15	Good	6	Poor	37	Good
	1/4/04	17	Good	5	Poor	40	Good
	6/10/04	13	Good	7	Fair	37	Good
	15/4/05	15	Good	6	Poor	37	Good
	27/9/05	16	Good	6	Poor	38	Good
	11/4/06	**14**	**Good**	**5**	**Poor**	**35**	**Good**
Weakleys Flat Ck D/S	26/09/00	21	Excellent	7	Fair	41	Good
	19/03/01	18	Excellent	6	Fair	40	Good
	11/10/01	14	Good	10	Good	40	Good
	15/04/02	14	Good	5	Good	37	Good
	9/10/02	17	Good	8	Fair	42	Good
	17/04/03	17	Good	8	Fair	39	Good
	10/10/03	15	Good	12	Excellent	42	Good
	1/4/04	17	Good	9	Good	45	Good
	6/10/04	14	Good	7	Fair	39	Good
	15/4/05	14	Good	5	Poor	30	Fair
	27/9/05	14	Good	8	Fair	36	Fair
	11/4/06	**15**	**Good**	**9**	**Good**	**37**	**Good**

Table 18 continued

Site	Date of Collection	Bank Condition Scores	Bank Condition Rating	Bed Condition Score	Bed Condition Rating	Stream Condition (RCE)	RCE Rating
Weakleys Flat Ck U/S	26/09/00	19	Excellent	5	Poor	34	Fair
	19/03/01	14	Good	6.5	Fair	33.5	Fair
	11/10/01	15	Good	6	Poor	34	Fair
	15/04/02	12	Fair	9	Good	37	Good
	9/10/02	16	Fair	8	Fair	39	Good
	17/04/03	15	Fair	9	Good	38	Good
	10/10/03	15	Good	7	Fair	36	Fair
	1/4/04	17	Good	9	Good	39	Good
	6/10/04	14	Good	6	Poor	35	Fair
	15/4/05	13	Good	6	Poor	36	Fair
	27/9/05	12	Good	8	Fair	37	Good
	11/4/06	**11**	**Fair**	**8**	**Fair**	**34**	**Fair**

3.2.5 Ground Water

The Water Management Plan (Perrens, 2000) details the measures employed by Donaldson to ensure protection of ground water on and around the mine site.

Groundwater monitoring has been ongoing since June 2000. The groundwater monitoring locations at Donaldson Coal were reviewed during the reporting period previous by the DEC(EPA) as part of the EPL licence review. There are now 10 current monitoring sites, the locations of which are shown on the revised "Location of Site Groundwater Wells – Figure 5.12". A copy is provided in **Appendix 2**. Ecowise Environmental is engaged by Donaldson to undertake the routine sampling and analysis of the monitoring sites.

Control Strategy:

The ground water piezometers are monitored to determine impacts on both Standing Water Levels (SWL) and ground water quality. In some cases there are several piezometers in the one hole (multi-level) measuring several aquifers throughout the strata.

A regional site was included in the monitoring program, REGDPZ1. It is located in Avalon Estate approximately 1.2km to the north of the active mining area.

The analytes EC, pH, TDS, TSS and SO_4 are routinely taken each month at all of the current piezometer sites. A full suite analysis is taken every six months and includes analysis of EC, pH, TDS, TSS, SO_4, Ca, Mg, Na, K, Cl, Fl, As, Al, Ba, Cd, Co, Cu, Cr, Fe, Mn, Pb, Zn and Total Alkalinity as $CaCO_3$.

The standing water level of each of the monitoring wells is routinely measured each month.

Environmental Performance:

There were no ground water-related complaints received by the mine. In addition, monthly water monitoring results were routinely reviewed to determine whether there were any changes as a result of activities at the mine.

A summary of the three key parameters required by the EPL (pH, EC and the Standing Water Level) for the reporting period as well as the pre-mining baseline is included in **Table 19**.

Generally the average Standing Water Levels (SWL) were lower than the baseline period, however the variation in water level could be attributed to seasonal variations as there are similar trends across all sites. Additionally, the SWL featured in **Table 19** are marginally lower than the corresponding values in the 2005 AEMR reporting period. This is most likely due to ongoing drought conditions in the region throughout the reporting period.

Average pH values of the locations included in sampling and analysis are comparable to the pre-mining values and have generally not fluctuated substantially from the values recorded in the 2005 AEMR reporting period, refer to **Table 19**. The EC values exhibit similar trends. The piezometers that did not return monitoring results, **DPZ2 and DPZ6** were dry on those sampling events.

Overall, it appears that Donaldson has had little or no impact on water quality of the surrounding off site ground water resources during the 2006 AEMR reporting period.

TABLE 19: SUMMARY OF KEY GROUNDWATER PARAMETERS COMPARED WITH PRE-MINING BASELINE DATA.

Sample Site	No Samples Required	No samples collected and analysed	Highest Sample Value			Lowest Sample value			Mean Sample Value		
			pH	EC	SWL*	pH	EC	SWL*	pH	EC	SWL*
DPZ2	12	0	-	-	-	-	-	-	-	-	-
Pre-mining	**---**	**---**	***No pre-mining samples available***								
DPZ3	12	12	6.7	14530	13.1	5.8	170	11.2	6.4	8659	11.8
Pre-mining	**---**	**---**	***6.96***	***11350***	***11.51***	***5.99***	***10200***	***12.05***	***6.59***	***10860***	***11.76***
DPZ5	12	12	6.9	7940	8	5.9	1120	6.7	6.5	4562	7.1
Pre-mining	**---**	**---**	***7.21***	***8520***	***5.73***	***6.72***	***4280***	***5.9***	***7.37***	***6986***	***5.81***
DPZ6	12	7	6	3810	26.2	5.6	3220	21.1	5.7	3497	24.8
Pre-mining	**---**	**---**	***No pre-mining samples available***								
DPZ7@50m	12	12	6.1	2190	28.8	5.6	1460	23.2	6	2032	24.2
Pre-mining	**---**	**---**	***6.14***	***2390***	***21.47***	***5.36***	***2180***	***22.00***	***5.76***	***2270***	***21.78***
DPZ8	12	12	6.4	2090	26.1	5.8	1820	24.5	6.1	1984	24.9
Pre-mining	**---**	**---**	***5.66***	***1820***	***24.35***	***5.46***	***1690***	***24.35***	***5.56***	***1755***	***24.35***
DPZ9	12	11	7.4	2330	34	6.7	2100	32.9	7.1	2222	33.1
Pre-mining	**---**	**---**	***6.32***	***2940***	***17.37***	***5.47***	***2221***	***17.65***	***6.02***	***2563***	***17.49***
DPZ10	12	12	6.7	3770	15	6.4	3440	13.5	6.6	3655	14
Pre-mining	**---**	**---**	***6.97.13***	***3760***	***12.4***	***6.48***	***3670***	***12.4***	***6.71***	***3611***	***12.4***
DPZ12	12	12	7	20900	18.9	6.4	3760	16.2	6.7	14697	17.3
Pre-mining	**---**	**---**	***No pre-mining samples taken due to restricted access to private property***								
DPZ13	12	12	6.9	14990	8.6	6.7	12530	7.1	6.8	13459	7.5
Pre-mining	**---**	**---**	***7.22***	***13750***	***7.01***	***6.67***	***12200***	***7.25***	***6.87***	***12907***	***7.14***

* Standing Water Level is recorded as metres (m) below the natural surface.

3.2.6 Contaminated Land

Donaldson coal has been operating since January 2001, and as such there is little occurrence of contaminated land on the site. The exception to this would be some minor surface contamination of hydrocarbons in areas where hydrocarbons are stored, in the workshop area and the go-line (where trucks are parked between shifts and at crib). There has also been some minor surface contamination recorded at the bulk fuel storage facility and refueling point.

Control Strategy:

The following control measures are employed at the Donaldson Coal Mine in order to ensure that contamination of land is minimal.

- There are no underground storage tanks (UST) on the site;
- Earthen and concrete bunding is used as secondary containment for the bulk storage of hydrocarbons and chemicals;

- Oil spill mop and absorbents are used to clean up spills;
- When spills occur the contaminated material is excavated and taken to a landfarm where it is remediated prior to being placed back in the fill;
- Oil/Water separators are used to remove any residual hydrocarbon from washdown waters;
- Spills are recorded on an Environmental Incidents report. This form is used to identify where improvements can be made to reduce the likelihood of the incident re-occurring;
- Both the mining contractor and the Donaldson Coal Environmental Officer undertake informal and formal inspections of the workshop areas to ensure hydrocarbons and chemicals are stored appropriately;
- All new employees are taken through an Environmental Awareness Induction prior to commencing work at the mine. This includes an explanation of ways to avoid spills and to ensure that appropriate actions are taken to clean up the spill and ensure that it is remediated;
- Toolbox talks are undertaken with all employees to explain ways to avoid spills and to ensure that appropriate actions are taken to clean up the spill and ensure that it is remediated; and
- A land farm area has been constructed on the out-of pit dump where contaminated soil is stored temporarily and treated to remove the hydrocarbons before being placed back on the rehabilitated areas and revegetated.

Environmental Performance:

There are no significant areas of land contamination. In addition, routine monitoring for hydrocarbons and surfactants is undertaken at the Industrial Area dam that receives the water from the workshop area. To date hydrocarbons (measured as Total Petroleum Hydrocarbons (TPH)) have not been recorded in routine environmental monitoring of the Industrial Area Dam. Ongoing monitoring and routine inspections will continue to detect the occurrence of spills (accidental or otherwise) and remediate them appropriately.

3.2.7 Threatened Flora

There was one species of threatened flora identified during the EIS, *Tetratheca juncea* (Black-eyed Susan). As a result a *Tetratheca juncea* Management Plan was developed by Gunninah (2000b). The aim of the plan is to provide a comprehensive program for the *Tetratheca juncea* population in the south western portion of the mine site.

A survey and identification report (Gunninah 2000c) was completed, which located the boundaries of the population and defined the limit of the conservation precinct. Subsequent work during 2001 and 2002 has extended the boundary after up to an additional 200 plants have been found during routine monitoring and vegetation characterisation.

In addition approximately four hundred plants have been discovered during routine pre-clearing surveys and monitoring episodes. A large proportion of these plants fall outside of the active mine area, adding further conservation significance to the area(s) identified and managed by Donaldson Coal as the *Tetratheca juncea* Conservation Area (TjCA) (as discussed below).

In 2005, a design was developed for the experimental translocation of *Tetratheca juncea from the planned mine disturbance area. The relocation is a management technique addressed in the Tetratheca juncea* Management Plan (Gunninah 2000b).

The experimental design for the translocation was based on a study currently being conducted in the Gwandalan area (Ecobiological 2005). The ongoing monitoring of the translocated plants will focus on collecting data and information about the circumstances under which the plants are growing. Each plant and each recipient site has been photographed following translocation and will be photographed every twelve months for 5 years. The plants were monitored and watered on a weekly basis for 6 weeks post planting to help ensure maximum initial survival and will be inspected twice per year for the five-year period. There were no additional reports prepared in the 2006 AEMR reporting period.

Control Strategy:

The following control measures are employed at the Donaldson Coal Mine in order to ensure a high level of conservation for the threatened plant species *Tetratheca juncea*:

- The dedication of 650ha of bushland conservation around the mine to conserve habitat;
- The reduction of the proposed mining footprint and the establishment of a conservation precinct protecting a known population of *Tetratheca juncea*;
- Ongoing mapping and management protocols; and
- Pre-clearing surveys by a qualified biologist prior any clearing activities.

In addition Donaldson Coal has supported both financially and technically, an honours student completing studies in Environmental Management at the University of Newcastle. The project commenced in January 2002 and is considering the ecology and growth of *Tetratheca juncea*.

Environmental Performance:

A baseline report was completed in January 2003 by Barker Harle, which describes the implementation of the TjMP and includes baseline information for use in subsequent reports. Subsequent monitoring and reporting will be undertaken on an annual basis.

The following is a summary of the monitoring program and works that has been completed in the *Tetratheca juncea* conservation area (TjCA).

- The overall monitoring and collection of data for the population is based on a 40 x 40m grid, which has been established permanently across the entire population;
- One hundred individual plants have been permanently pegged and tagged. The co-ordinates of these plants have been referenced into the 40 x 40mm grid. The location of each of these plants was selected so those individuals growing within the range of the micro-vegetative communities present in the TjCA were represented. The size of these plants has been recorded;
- A detailed survey has been carried out to describe the overstorey, shrubs to 2m high and groundcover vegetative communities present in the TjCA;
- Ten 10 x 10m monitoring quadrants have been pegged out throughout the population. Following the completion of the vegetation survey these quadrants have been located so that each one is in a different vegetative community in which T. juncea grows. The floristic content and abundance, using the modified Braun-Blanquet scale, of the vegetation within each of these quadrants has been described in detail.

- A detailed plant count was planned for late 2002 and again in 2004, however persistent drought conditions have significantly reduced the flowering season, meaning that a count was not considered reliable during this reporting period

3.2.8 Threatened Fauna

Several species of threatened fauna were identified during the EIS and supplementary reports, including both the areas proposed for mining and the immediate environs. They include the following:

- The Powerful Owl;
- The Masked Owl;
- The Barking Owl;
- The large footed Mytotis; and
- Little Bent-winged Bat.

Since the initial development of the Flora & Fauna Management Plan the Sooty Owl and the Squirrel Glider have also been recorded on site.

Control Strategy:

The following control measures are employed at the Donaldson Coal Mine in order to ensure a high level of conservation for the threatened fauna species found on the site:

- The dedication of 650ha of bushland conservation around the mine to conserve habitat;
- Ongoing survey and management protocols;
- Pre-clearing surveys by a qualified biologist prior any clearing activities;
- Routine annual quadrant monitoring,
- Minimal clearance to only what is required; and
- Ongoing and progressive rehabilitation of disturbed areas.

The following flora and fauna monitoring activities were undertaken during the reporting period:

- Surveys of the foliage projective cover of each quadrat;
- Surveys of height and basal area of trees within each quadrat;
- Small mammal trapping (coinciding with autumn) within a radius of 300 metres centered on each quadrat;
- Insectivorous bat call recording at each quadrat;
- Owl call playback in the vicinity of each quadrat;
- Spotlighting in the area around each quadrat to observe any nocturnal birds and mammals;

- General observations around the larger conservation area; and
- Threatened species assessment.

Six monthly and annual reports are produced compiling the work undertaken throughout the year, along with detailed annual data interpretation and comparison with the baseline study. In addition Donaldson Coal has previously supported both financially and technically, an honors student completing studies in Environmental Management at the University of Newcastle. The project commenced in July 2002 and considered a comparison in the ecology of the Powerful Owl in both disturbed and undisturbed environments. The individuals at Donaldson Coal are an important population considered in this research project.

Environmental Performance:

The monitoring undertaken to date suggests that there is no evidence of any significant impact on the local fauna. In fact (as reported in the six monthly Fauna Monitoring report (Ecobiological, 2004)), the return of the Powerful Owl to an area near their original nesting site and the capture of squirrel gliders at quadrat 8 suggest that the natural habitat of these fauna has not been adversely affected by the operations of Donaldson Coal.

3.2.9 Weeds and Pests

The area was heavily disturbed by fire, dumping of rubbish, 4 wheel drive vehicles and motorcycles prior to the commencement of mining. As a result there have been a number of weeds introduced into the area (pests are not considered as much of a problem).

Donaldson has undertaken to manage the weeds and pests as part of the management of the property including the areas in the Bushland Conservation Area (BCA) the areas to be disturbed by mining and the rehabilitated areas.

Control Strategy:

The weed management program involves the active control and monitoring throughout the site to control and prevent the spread of invasive weeds (including the rehabilitated areas). The following control strategies may be used on the site:

- Observance of the requirements prescribed by the NSW Noxious Weeds Act (1993);
- Assessment of weeds during pre-clearing and monitoring surveys;
- Dedicated weed control programs along access roads, tracks and exploration lines;
- Ensuring vehicles coming onto the site are clean and free of soil that could transfer weeds from other sites; and
- Restricting access to the Donaldson mine site by the erection of a fence and gates in an attempt to control illegal dumping.

The primary objective of the pest control strategy is to control the number of feral animals on the site. This is achieved by assessing the presence of pests during the routine monitoring program, pre-clearing surveys and during day to day activities. Where necessary the following specific control measures may be employed:

- Detailed surveys for feral animals; and
- Targeted baiting and trapping programs.

Environmental Performance:

Donaldson Coal continued the noxious weed control by the spraying of Pampas Grass plants around the site on disturbed areas. Feral animals are not considered a major problem, however should it be determined in the future that action is required, the above control strategies will be employed.

3.2.10 Blasting

Blasting activities commenced at Donaldson Coal mine on the 15th November 2001. A total of 43 blasts were undertaken at the mine during the 2006 AEMR reporting period compared to 57 blasts in the 2005 AEMR reporting period.

Prior to the commencement of blasting, structural surveys of all properties within 1.5km of the blast locations at the mine were completed. A copy of each report was presented to the resident and also kept on file at the mine.

On the 1st May 2001, five permanent blast monitoring stations (measuring peak particle velocity - ppv (mm/s) and Airblast (dB Linear) were installed and commissioned at the five locations described below:

1. Fairfax Regional Printing Facility;
2. Bartter Poultry Farm – Farm 6;
3. Weakley's Drive (Chidgey), Beresfield;
4. Avalon Estate, Thornton; and
5. The Hunter Water Pipeline.

A map, showing the blast monitors location is included in **Appendix 2** of this report.

The nearest unit to the mine (Weakleys Drive) was established as a trigger unit. When it records a blast at the mine it triggers the other units to capture the relevant data. A trigger limit for peak particle velocity (mm/s) has been determined in order to minimise the number of spurious events recorded by the monitor. The loggers are automatically downloaded at the end of each day using scheduling software. Waveforms are recorded by the logger for each event and are used in the interpretation of the results (eg. separating wind gust from overpressure events). This system was found to miss small blasts of low vibration and a near field unit was established in March 2003 to improve data capture. This is discussed in more detail below.

The Barter site monitor results have not been included, as the site has been vacated and is now derelict. The Fairfax Regional Printing facility is monitored for ground vibration as required by the development consent.

Control Strategy:

The following control measures have been employed at the Donaldson Coal Mine in order to ensure that the limits set out in the development consent and DEC(EPA) licence are not exceeded.

- Establishment of a site specific site law using a ten (10) hole trial blasting program and detailed computer modelling;
- Blast design considerations (burden and spacing, stemming, MIC, etc);
- Considerations of explosive loading, initiation hook up and firing;
- Use of experienced blast contractors;

- Monitoring the meteorological conditions prior to blasting;
- Avoidance of concurrent blasts with adjoining Coal Mines; and
- Notifying Landowners and occupiers of blast events.

Environmental Performance:

A summary of the Peak Particle Velocity monitoring results for blasts undertaken during the period is presented in **Table 20.** The maximum vibration (peak particle velocity) recorded at any of the sites during the reporting period was 3.22 mm/s, below the applicable criteria(5 mm/s).

TABLE 20: SUMMARY OF PEAK PARTICLE VELOCITY (ppv) MONITORING RESULTS (mm/s).

Sample Site	No Samples Required	No samples collected and analysed	Highest Sample Value	Lowest Sample value	Mean Sample Value
Weakleys Dr (Chidgey)	43	39	0.66	0.03	0.24
Fairfax Printing	43	41	0.58	0.01	0.20
Avalon Estate	43	41	0.75	0.025	0.34
HWC Pipeline	43	41	3.22	0.04	1.16

A summary of the overpressure monitoring results for blasts undertaken during the period is presented in **Table 21** below. EPL criteria are applicable at the Weakleys Drive and Avalon Estate monitors. All blasts at these sites recorded blast overpressure below 115dB(L), well within the EPL licence conditions.

TABLE 21: SUMMARY OF OVERPRESSURE (dBL) MONITORING RESULTS.

Sample Site	No Samples Required	No samples collected and analysed	Highest Sample Value	Lowest Sample value	Mean Sample Value
Weakleys Dr (Chidgey)	43	39	111.8	10	99.17
Avalon Estate	43	41	108.8	88.2	99.20
HWC Pipeline	43	41	115.7	92.2	106.13

Overall the data capture rate during the reporting period has been very good. **Table 22** shows the data capture rate for each of the blast monitoring units during the reporting period. None of the blasts undertaken at Donaldson during the period were too small to trigger the monitors that are some 1100m from the mine. This is an improvement from last year. The table below considers the data capture rate (%) both with and without the smaller blasts.

TABLE 22: SUMMARY OF DATA CAPTURE RATES – BLAST MONITORING UNITS

Monitoring Location	% Data Capture (including small blast)	% Data Capture (excluding small blast)
Chidgey (Weakleys Drive)	90.7	90.7
Fairfax Regional Printing Press	95.3	95.3
McDonnell's (Avalon Estate)	95.3	95.3
Hunter Water Pipeline	95.3	95.3
OVERALL:	**94.1**	**94.1**

The main causes for data loss have been equipment failure and vandalism. The rate of data capture was similar from that recorded in the 2005 AEMR reporting period. This has been achieved by way of the following initiatives implemented by the mine.

a) A near field "trigger" unit was established on the 17 March 2003 in the pit to ensure that the smaller blasts are not missed. When the monitor's vibration threshold is triggered it transmits the trigger to the outlying units.

b) Detailed reviews of system failures (replacement of faulty components). This includes a monthly test of components in the field and re-calibration and servicing once a year;

c) Monitors are now interrogated by the automatic scheduler system on a daily basis to detect any failures early and ensure correction prior to a blast; and

d) The units will be upgraded as part of the annual calibration. Each monitor will get the latest software updates each time they are sent for service repair or calibration.

3.2.11 Noise

Richard Heggies & Associates[2] have completed four routine quarterly unattended continuous noise surveys for Donaldson during the reporting periods. The dates for the surveys are as follows:

- Tuesday 6th December – Monday 12th December 2005;
- Monday 20th February- Thursday 2nd March 2006
- Friday 12th May – Friday 19th May 2006; and
- Thursday 13th – Tuesday 19th September 2006

Operator attended surveys were also conducted to verify the unattended logging results and to determine the character and contribution of noise sources to the total ambient noise. The dates of these attended surveys were as follows:

- Tuesday 6th December (daytime) and Wednesday 7th December 2005 (nighttime)
- Monday 20th February (daytime) and Wednesday 1std March 2006(daytime and nighttime)
- Friday 12th May (daytime) and Wednesday 17th May 2006(nighttime); and
- Thursday 13th September 2006 (daytime) and Tuesday 19th September 2006(nighttime)

Richard Heggies & Associates[2] have performed baseline and preceding quarterly surveys at 11 locations around the Donaldson mine site Richard Heggies & Associates, (2004, 2005a-c). Based on these surveys, the noise monitoring is now concentrated at the four potentially most affected areas at time of survey. These locations are provided in **Table 23**.

TABLE 23: LIST OF PRESENT NOISE MONITORING SITES

Location	Donaldson Monitoring location
98 Weakleys Dr., Beresfield	Location A
Leneghans Drive	Location C
684 Black Hill Road , Black Hill	Location F
3 Lord Howe Drive, Ashtonfield	Location I
Bus Depot- Spotted Gum Drive, Ashtonfield	Location J
"Bartter Enterprise"s, Farm No. 6	Location K

As the mine moves further to the south/west, additional monitoring sites will be included as required. A map showing the location of the above monitoring sites can be found attached as **Appendix 2** to this report.

Control Strategy:

The following control measures have been employed at the Donaldson Coal Mine in order to ensure that the limits set out in the development consent are not exceeded:

- Construction of an 8m high acoustic barrier which will be progressively moved with the excavation;
- Reduced night time operations, operating only on a day and afternoon roster with the full overburden removal and mining fleets;
- Testing of all equipment prior to being put to work at the operation;
- Constructing roadways and dumps to best use the natural shielding of the topography;

[2] RICHARD HEGGIES & ASSOCIATES (Newcastle Office), Newcastle, NSW. Ph:02 49698571

- Routine noise monitoring and complaint based investigative monitoring to determine compliance with noise limits;

- Monitoring the meteorological conditions and re-arranging the pit where possible to shield noisy activities during temperature inversions.

Environmental Performance:

Donaldson Coal has been monitoring noise from the mine since the commencement of operations in January 2001. The following sections summarise the results from both the routine attended and continuous monitoring undertaken during the reporting period.

Results of Unattended Continuous Surveys

Tuesday 6th December – Monday 12th December 2005 (December Quarter)

Table 24 presents a comparison between the noise statistics collected during the December quarter 2005 unattended continuous survey and the pre-mining baseline statistics.

TABLE 24: Unattended Continuous Monitoring Ambient Noise Levels, DECEMBER MONITORING PERIOD.

Location	Period	L_{A1}	L_{A10}	L_{Aeq}	L_{A90}
A Weakleys Drive Beresfield	**Daytime**	58	55	53	45
	Evening	55	54	52	45
	ENCM Daytime	59	55	53	47
	Night-time	58	52	51	39
I Lord Howe Dr. Ashtonfield	**Day time**	55	49	53	41
	Evening	52	47	51	41
	ENCM Daytime	54	49	54	41
	Night	48	44	43	35
J Avalon Estate Bus Depot	**Daytime**	58	55	53	49
	Evening	56	54	53	48
	ENCM Daytime	57	55	54	48
	Night-time	55	52	50	40
K Bartter Farm No.6	**Daytime**	54	51	51	43
	Evening	53	48	47	41
	ENCM Daytime	54	50	50	42
	Night-time	54	49	47	33

Note: EPA periods used for the Industrial Noise Policy (INP) are defined as Daytime – 7.00 am to 6.00 pm Monday to Saturday, 8.00 am to 6.00 pm Sunday; Evening - 6.00 pm to 10.00 pm; Night-time - 10.00 pm to 7.00 am pm Monday to Saturday, 10.00 pm to 8.00 am Sunday.
EPA Periods used for the Environmental Noise Control Manual (ENCM) Daytime 7.00 am to 10.00 pm, Night-time 10.00 pm to 7.00 am.

Ambient LA_{90} Noise Levels

The summary of results in **Table 24** shows that ambient daytime LA90 noise levels recorded for the quarter ending December 2005 were generally similar to levels measured for the baseline monitoring process for all locations except at Location J (Avalon Estate) where the relocation of the

noise logger at Location J from Killarney Street to Spotted Gum Road, approximately 200 metres closer to the New England Highway is responsible for the elevated LA90 noise levels for all periods.

Night time and evening LA90 levels at all other locations were similar to baseline noise levels. A comparison of this monitoring period with the same monitoring period in 2004 indicates that LA90 noise levels recorded during all periods were generally similar for all locations, except at Location I where LA90 noise levels were generally lower.

A comparison of the current monitoring period with the previous quarterly survey (September 2005) indicates that evening and night-time LA90 noise levels were similar for all locations except at Location I where evening and night time levels were slightly lower. Daytime LA90 noise levels have not varied significantly at any of the locations.

Ambient LA_{10} Noise Levels

Ambient daytime LA10 noise levels recorded for the December 2005 quarter were generally similar to levels measured for the baseline monitoring process for all locations except at Location J (Avalon Estate) where the relocation of the noise logger (for Location J) from Kilarney Street to Spotted Gum Road, approximately 200 metres closer to the New England Highway is likely to be responsible for the elevated LA10 noise levels for all periods.

A comparison of evening and night-time LA10 noise levels were generally similar to those during the same period in 2004. A comparison of this monitoring period with the previous quarterly survey (September 2005) indicates LA10 noise levels were generally similar for all periods at all monitoring locations except at Location I where levels were generally lower during the evening and night time periods.

Monday 20th February- Thursday 2nd March 2006(March Quarter)

Table 25 presents a comparison between the noise statistics collected during the March 2006 quarter unattended continuous survey and the pre-mining baseline statistics.

Ambient LA_{90} Noise Levels

The ambient LA_{90} noise levels recorded in the continuous unattended survey of the March 2006 quarter are generally similar or slightly higher compared to the pre-mining baseline.
The LA_{90} results presented in **Table 25**.

TABLE 25: Unattended Continuous Monitoring Ambient Noise Levels, MARCH MONITORING PERIOD.

Location	Period	LA1	LA10	LAeq	LA90
A Weakleys Drive Beresfield	**Daytime**	*	*	*	54
	Evening	*	*	*	53
	ENCM Daytime	*	*	*	50
	Night	*	*	*	50
C Lenaghans Drive	**Daytime**	78	65	48	65
	Evening	75	59	44	62
	ENCM Daytime	66	54	57	38
	Night	66	54	38	57
F Lot 684 Black Hill Road, Black Hill	**Daytime**	68	50	36	55
	Evening	64	45	36	54
	ENCM Daytime	52	42	47	30
	Night	52	42	30	47
K Bartter Farm No.6	**Daytime**	55	52	42	52
	Evening	55	51	42	51
	ENCM Daytime	57	52	41	58
	Night	56	51	40	57

*Note: * Noise logger malfunction, only LA90 indices were able to be retrieved.*

EPA periods used for the Industrial Noise Policy (INP) are defined as Daytime - 7.00 am to 6.00 pm Monday to Saturday, 8.00 am to 6.00 pm Sunday; Evening - 6.00 pm 10.00 pm; Night - 10.00 pm to 7.00 am pm Monday to Saturday, 10.00 pm to 8.00 am Sunday.
EPA Periods used for the Environmental Noise Control Manual (ENCM) Daytime 7.00 am to 10.00 pm, Night 10.00 pm to 7.00 am.

Ambient LA_{90} Noise Levels

The summary of results in **Table 25** shows that ambient daytime LA90 noise levels recorded for the quarter ending March 2006 were generally similar to levels measured for the baseline monitoring process for Locations F and K.

Location C (Lenaghans Drive) noise levels for the March monitoring period were significantly higher compared to baseline noise levels recorded in the year 2000. This was caused by the noise logger location being approximately 500m closer to Lenaghans Drive for the March monitoring period compared to logger location for the base line monitoring period. The increase in LA90 noise levels is representative of typical trends associated with consistent traffic noise, hence concluding that this increase in LA90 noise level is influenced by traffic noise produced on the nearby F3 Freeway, located directly adjacent to Lenaghans drive.

Night time and evening LA90 levels at all other locations were similar to baseline noise levels with the exception of Location C which shows a slight increase. Once again, this was influenced by ongoing traffic noise on the nearby F3 Freeway.

A comparison of this monitoring period with the same monitoring period in 2005 indicates that LA90 noise levels recorded during all periods were generally similar for Location K. No comparison can be made for Locations C and F where monitoring was not conducted at these locations in 2005. No comparisons can be made for Location A due to insufficient logger data.

A comparison of the current monitoring period with the previous quarterly survey (December 2005) indicates that evening and night-time LA90 noise levels were slightly lower for location K. Once again no comparison can be made for locations A, C and F. Daytime LA90 noise levels have not varied significantly at Location K.

Ambient LA_{10} Noise Levels

Ambient daytime LA10 noise levels recorded for the December 2005 quarter were generally similar to levels measured for the baseline monitoring process for location K. Noise levels at Location C (Lenaghans Drive) for the March monitoring period were significantly higher compared to baseline noise levels recorded in the year 2000. The increase in LA10 noise levels is representative of typical trends associated with intermittent traffic noise, hence concluding that this increase in LA10 noise level is influenced by traffic noise produced on Lenaghans Drive.

A comparison of evening and night-time LA10 noise levels were generally similar to those during the same period in 2005 for Location K. A comparison of this monitoring period with the previous quarterly survey (December 2005) indicates LA10 noise levels were slightly lower for Location K.

Friday 12th May – Friday 19th May 2006 (June quarter)

Table 26 presents a comparison between the noise statistics collected during the June 2006 quarter unattended continuous survey and the pre-mining baseline statistics.

TABLE 26: Unattended Continuous Monitoring Ambient Noise Levels, JUNE MONITORING PERIOD.

Location	Period	L_{A1}	L_{A10}	L_{Aeq}	L_{A90}
A Weakleys Drive Beresfield	**Daytime**	59	56	60	49
	Evening	59	55	53	48
	ENCM Daytime	60	56	60	47
	Night	58	54	51	41
C Lenaghans Drive	**Daytime**	79	66	65	47
	Evening	76	60	62	46
	ENCM Daytime	78	64	64	47
	Night	68	56	59	39
F Lot 684 Black Hill Road, Black Hill	**Daytime**	73	53	59	42
	Evening	64	51	55	41
	ENCM Daytime	72	53	57	41
	Night	54	48	52	40
K Bartter Farm No.6	**Daytime**	56	51	50	41
	Evening	57	53	49	41
	ENCM Daytime	56	52	50	41
	Night	54	49	50	35

Note: EPA periods used for the Industrial Noise Policy (INP) are defined as Daytime - 7.00 am to 6.00 pm Monday to Saturday, 8.00 am to 6.00 pm Sunday; Evening - 6.00 pm 10.00 pm; Night - 10.00 pm to 7.00 am pm Monday to Saturday, 10.00 pm to 8.00 am Sunday.
EPA Periods used for the Environmental Noise Control Manual (ENCM) Daytime 7.00 am to 10.00 pm, Night 10.00 pm to 7.00 am.

Ambient LA_{90} Noise Levels

The results shown in **Table 26** show that ambient daytime LA 90 noise levels recorded for the quarter ending June 2006 were generally similar to the levels measured for baseline monitoring process for locations A and K. Location C noise levels were shown to be significantly higher compared to baseline noise levels recorded in the year 2000. This is because the year 2006 logger was located 500m closer to Lenaghans Drive than the logger location for baseline data. The increased LA90 noise is representative of typical trends associated with consistent traffic. The source of this is the F3 Freeway located adjacent to Lenaghans Drive.

Ambient evening and night-time LA90 noise levels at Location A and K were also similar to baseline noise levels. Location C showed traffic influences with a slight increase. The increase in LA 90 noise levels at location F can only be explained by an increase in evening and nighttime traffic on the nearby John Renshaw Drive that was qualified by the operated attended surveys.

A comparison between this period and that of 2005 indicates that LA90 noise levels recorded during all period were generally similar for location A, although noise levels have decreased at location K. No comparisons can be made for locations C and F as they were not monitored in the previous period.

A comparison of the current monitoring period with the previous quarterly survey (March 2006) indicates that day, evening and night-time LA90 noise levels decreased at location K. LA90 noise levels have decreased significantly at location C. Location F levels have increased considerably in the day, evening and night-time period which is believed have been influenced by traffic activity ion John Renshaw Drive. No comparison can be made for location A due to the absence of logger data.

Ambient $L10_{10}$ Noise Levels

Ambient day, evening and night-time L_{A10} noise levels recorded for the June 2006 quarter were generally similar to levels measured for the baseline monitoring process for locations A, F and K.

Noise levels at Location C (Lenaghans Drive) for the March monitoring period during the day, evening and night-time periods were significantly higher compared to baseline noise levels recorded in the year 2000. The increase in L_{A10} noise levels is representative of typical trends associated with intermittent traffic activity, which in this case, is associated with traffic noise produced on the nearby F3 Freeway, located directly adjacent to Lenaghans drive.

A comparison of evening and night-time L_{A10} noise levels to those during the same period in 2005 were found to be generally similar for Locations A and K.

A comparison of this monitoring period with the previous quarterly survey (March 2006) indicates L_{A10} noise levels were similar at Location C, although slightly decreased for Location K.

Ambient L_{A10} noise levels for the day, evening and night-time periods showed a slight increase at Location F which is assumed to be influenced by an increase in traffic activity along John Renshaw Drive

Thursday 13th September – Tuesday 21st September 2006 (September quarter)

Table 27 presents a comparison between the noise statistics collected during the September 2006 quarter unattended continuous survey and the pre-mining baseline statistics.

TABLE 27: Unattended Continuous Monitoring Ambient Noise Levels, SEPTEMBER MONITORING PERIOD.

Location	Period	L_{A1}	L_{A10}	L_{Aeq}	L_{A90}
A Weakleys Drive Beresfield	**Daytime**	59	55	56	46
	Evening	59	55	53	47
	ENCM Daytime	59	55	56	46
	Night	58	54	52	41
C Lenaghans Drive	**Daytime**	78	65	65	48
	Evening	76	61	62	51
	ENCM Daytime	77	64	64	48
	Night	68	56	59	43
F Lot 684 Black Hill Road, Black Hill	**Daytime**	73	53	60	38
	Evening	66	49	55	41
	ENCM Daytime	72	51	39	49
	Night	56	48	53	35
K Bartter Farm No.6	**Daytime**	57	53	59	43
	Evening	57	53	51	41
	ENCM Daytime	57	53	42	59
	Night	58	53	52	39

Note: EPA periods used for the Industrial Noise Policy (INP) are defined as Daytime - 7.00 am to 6.00 pm Monday to Saturday, 8.00 am to 6.00 pm Sunday; Evening - 6.00 pm 10.00 pm; Night - 10.00 pm to 7.00 am pm Monday to Saturday, 10.00 pm to 8.00 am Sunday.
EPA Periods used for the Environmental Noise Control Manual (ENCM) Daytime 7.00 am to 10.00 pm, Night 10.00 pm to 7.00 am.

Ambient LA_{90} Noise Levels

Table 27 shows that ambient daytime LA90 noise levels recorded for the quarter ending September 2006 were generally similar or slightly to levels in the previous monitoring quarter.

Location A results show that ambient daytime LA90 noise levels recorded for the quarter ending September 2006 were generally similar (within 2 dBA) to levels measured during the baseline monitoring period for day, evening and night-time periods. In addition, ambient LA90 levels recorded during the same quarter last year, September 2005, and the last quarter, June 2006, have remained consistent (within 2 dB) to those recorded in September 2006.

Location C (Lenaghans Dr) noise levels for the September 2006 monitoring period were significantly higher compared to baseline noise levels recorded in the year 2000. This is because noise logger location for the September 2006 monitoring period was approximately 500m closer to Lenaghans Drive compared to the logger location for the base line monitoring period. The increase in LA90 noise levels is representative of typical trends associated with consistent traffic activity, which in this case, is associated with traffic noise produced on the nearby F3 Freeway, located directly adjacent to Lenaghans Drive and not from an increase in mine noise contribution. Comparison with recorded LA90 noise levels during the June Quarter 2006 show a marginal increase to those measured this period. Given the observations made during the operator attended noise surveys this increase is

likely to be caused by increase in traffic volume along the F3 and/or ambient frogs/insects rather than increase in mine noise contribution.

Location F results show that ambient daytime LA90 noise levels recorded for the quarter ending September 2006 were slightly higher than levels measured during the baseline monitoring program during all periods. Unlike the baseline monitoring results, September 2006 noise levels are consistent with those measured during the last quarter (June 2006). Given that no exceedance was evident within June 2006 monitoring results and the character of the noise sources used on Donaldson mine, it is unlikely that this increase in LA90 noise levels would be caused by an increase in mine noise contribution.

Location K results show that ambient daytime LA90 noise levels recorded for the quarter ending September 2006 were generally similar to levels measured for the baseline monitoring process during the day and evening periods. An increase (approx. 4 dBA) of baseline noise levels, which is also evident within levels recorded during the last period (June 2006), is apparent within night-time noise levels. Given that no exceedance was evident last quarter and the character of the noise sources used on Donaldson mine, this increase in LA90 noise level is unlikely to be caused by increase in mine noise contribution and most probably caused by increase in traffic along John Renshaw Dr and/or and increase in ambient insect/frog noise levels.

Ambient LA_{10} Noise Levels

A summary of ambient L_{A10} noise levels can be found within **Table 27**.

Location A results show that ambient daytime L_{A10} noise levels recorded for the quarter ending September 2006 were generally similar (within 2 dBA) to levels measured during the baseline monitoring period for day, evening and night-time periods. In addition, ambient L_{A10} levels recorded during the same quarter last year, September 2005, and the last quarter, June 2006, have remained consistent (within 2 dB) to those recorded in September 2006.

Noise levels at Location C (Lenaghans Drive) for the September monitoring period during the day, evening and night-time periods were significantly higher compared to baseline noise levels recorded in the year 2000. The increase in L_{A10} noise levels is representative of typical trends associated with intermittent traffic activity, which in this case, is associated with traffic noise produced on the nearby F3 Freeway, located directly adjacent to Lenaghans drive. Comparison with recorded L_{A10} noise levels during the June Quarter 2006 show a marginal increase to levels measured this period. Given the observations made during the operator attended noise surveys, this increase is likely to be caused by increase in traffic volume along the F3 and/or ambient frogs/insects rather than increase in mine noise contribution.

Location F results show that ambient daytime L_{A10} noise levels recorded for the quarter ending September 2006 are similar (within 2 dBA) to levels measured during both the baseline monitoring period and the last monitoring period (June 2006) during day, evening and night-time periods.

Location K results show that ambient daytime L_{A10} noise levels recorded for the quarter ending September 2006 were generally similar to levels measured for the baseline monitoring process during the day and evening periods. An increase (approx. 4 dBA) of baseline noise levels, which is also evident within levels recorded during the last period (June 2006), is apparent within night-time noise levels. Given that no exceedance was evident during the last quarter and the character of the noise sources used on Donaldson mine, this increase in L_{A10} noise level is unlikely to be caused by increase in mine noise contribution and most probably caused by increase in traffic along John Renshaw Dr and/or an increase in ambient insect/frog noise levels.

Results of Attended Surveys

Tuesday 6th December- Wednesday 7th December 2005

Operator attended noise measurements were conducted during the daytime period on Tuesday 6th December 2005. Operator attended noise measurements for night-time and evening periods were conducted on the Wednesday 7th December 2005.

The results of the operator attended noise measurements are given in **Tables 28 to 31**. Ambient noise levels given in the tables include all noise sources such as traffic, insects, birds, and mine operations as well as any other industrial operations. Mine contributions listed in the tables are from Donaldson Mine and are stated only when a contribution could be quantified.

TABLE 28: ATTENDED SURVEY RESULTS – LOCATION A - 98 WEAKLEYS DRIVE BERESFIELD.

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels L_{Amax} – dBA
		L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	
6/12/05 10:30 am Day W= Calm Temp=30°C	Ambient	63	59	55	47	52	Near traffic, trucks to 62. Insects ~ 47. Donaldson mine inaudible.
7/12/05 8:55 pm Evening W= Calm Temp=27°C	Ambient	75	72	67	51	53	Near traffic, trucks to 75. Insects ~ 50. Donaldson mine inaudible.
7/12/05 10.45 pm Night W= Calm Temp=22°C	Ambient	78	73	68	51	62	Near traffic, cars to 64, trucks to 78. Insects ~ 51. Donaldson mine inaudible.

TABLE 29: ATTENDED SURVEY RESULTS – LOCATION I - LORD HOWE DRIVE ASHTONFIELD.

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels L_{Amax} – dBA
		L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	
6/12/05 9:45 am Day W= Calm Temp=30°C	Ambient	58	52	47	41	45	Near traffic, trucks to 58. Car ~ 44. Far traffic to 44, birds to 47. Donaldson mine inaudible.
7/12/05 9:45 pm Evening W= Calm Temp=24°C	Ambient	58	56	52	45	49	Traffic 45-47. Insects ~ 42-45. Near traffic 58. Donaldson mine inaudible.
7/12/05 10.05 pm Night W= Calm Temp=22°C	Ambient	57	56	52	44	49	Traffic 43-45. Insects ~ 42-45. Near traffic 57. Donaldson mine inaudible.

TABLE 30: ATTENDED SURVEY RESULTS - LOCATION J - AVALON ESTATE

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels L_{Amax} – dBA
		L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	
6/12/05 10:00 am Day W= Calm Temp=31°C	Ambient	58	55	53	49	51	Traffic constant 54. Donaldson mine Inaudible
7/12/05 9:25 pm Evening W= Calm Temp=24°C	Ambient	58	55	53	49	51	Traffic constant 53-55, trucks to 58. Insects ~ 47-50. Donaldson mine inaudible.
7/12/05 10.25 pm Night W= Calm Temp=22°C	Ambient	57	56	53	48	51	Traffic constant 62-56, trucks to 57. Insects ~ 47-50. Donaldson mine inaudible.

TABLE 31: ATTENDED SURVEY RESULTS – LOCATION K –BARRTER ENTERPRISES FARM 6, BLACK HILL.

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels L_{Amax} – dBA
		L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	
6/12/05 11:00 am Day W= Calm Temp=32°C	Ambient	64	52	48	42	46	Traffic 40 to 48. Insects 44. Donaldson mine inaudible.
7/12/05 8:30 pm Evening W= Calm Temp=27°C	Ambient	62	54	51	45	48	Distant traffic 40-42. Cars 40-45, trucks to 55. Insects 47. Donaldson mine inaudible.
7/12/05 10.05 pm Night W= Calm Temp=22°C	Ambient	58	54	51	44	48	Distant traffic 40-42. Cars 40-45, trucks to 55. Insets 47 Mine truck drive off ~ 42-44. Excavator ~ 40-42. Donaldson mine audible. Mine LA10 contribution ~ 40

Noise generated by local and distant traffic was a significant contributor to noise levels at most monitored locations. Donaldson Mine operations were observed to be audible at Location K (Bartter) during the night time. Results of operator attended noise surveys identify that contributed noise levels from Donaldson Mine do not exceed noise emission goals for any period. Results of operator attended noise surveys have shown that contributed noise levels from Donaldson Mine operations do not exceed noise emission goals.

Monday 20th February- Thursday 2nd March 2006

Operator attended noise measurements were conducted during the daytime, night-time and evening periods on Monday 20th February and Thursday 2nd March 2006. The results of this survey are presented in **Tables 32-35.** Ambient noise levels given in the tables include all noise sources such as traffic, insects, birds, and mine operations as well as any other industrial operations. Mine contributions listed in the tables are from Donaldson Mine and are stated only when a contribution could be quantified.

TABLE 32: ATTENDED SURVEY RESULTS – (LOCATION A) 98 WEAKLEYS DRIVE, BERESFIELD

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels L_{Amax} – dBA
		L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	
20/02/06 10:30 am Day W= Calm Temp=28°C	Ambient	58	57	55	50	53	Near traffic, trucks ~ 54. Resident activities to 62 Donaldson mine inaudible
01/03/06 6:10 pm Evening W= Calm Temp=24°C	Ambient	62	57	53	47	51	Near traffic, trucks to 50 Insects, birds ~ 52 Resident activities ~ 52 Donaldson mine inaudible.
01/03/06 10.38 pm Night W= Calm Temp=22°C	Ambient	89	81	71	52	70	Near traffic, cars to 72, trucks to 89. Insects ~ 49 Donaldson mine inaudible

TABLE 33: ATTENDED SURVEY RESULTS – (LOCATION C) LENAGHANS DRIVE.

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels L_{Amax} – dBA
		L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	
20/02/06 9:30 am Day W= Calm Temp=28°C	Ambient	58	52	47	41	45	Near traffic, trucks to 58. Cars ~ 44 Far traffic to 44, birds to 47. Donaldson mine inaudible
01/03/06 6:30 pm Evening W= Calm Temp=24°C	Ambient	92	82	70	46	69	Traffic, Passing cars to 92. Insects ~ 47-50. Near traffic from F3 ~ 58. Donaldson mine inaudible.
01/03/06 10.30 pm Night W= Calm Temp=22°C	Ambient	86	73	56	44	62	Traffic ~ 51 Insects ~ 45-47. Passing car to 87. Donaldson mine inaudible

TABLE 34: ATTENDED SURVEY RESULTS – (LOCATION F) LOT 684 BLACH HILL ROAD, BLACK HILL

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
20/02/06 10:30 am Day W= Calm Temp=29°C	Ambient	92	77	55	38	67	Passing cars, traffic to 77, trucks to 92. Truck reverse alarm ~ 46. Traffic from John Renshaw Drive ~ 58-52. Donaldson mine inaudible.
01/03/06 6:45 pm Evening W= Calm Temp=24°C	Ambient	81	69	61	43	51	Distant Traffic 43-45. Passing car to 81. Insects ~ 46-48. Donaldson mine inaudible.
01/03/06 11.35 pm Night W= Calm Temp=22°C	Ambient	53	51	47	37	43	Distant traffic ~ 51. Distant thunder~ 46. Insects ~ 45-50. Distant trucks audible, possibly mining <40. Mine LA10 contribution ~ 40.

TABLE 35: ATTENDED SURVEY RESULTS – (LOCATION K) BARRTER ENTERPRISES FARM 6, BLACK HILL.

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
20/02/06 10:10 am Day W= Calm Temp=29°C	Ambient	64	59	53	46	50	Distant traffic 46 to 54. Insects 42-45. Donaldson mine inaudible
01/03/06 7:05 pm Evening W= Calm Temp=24°C	Ambient	64	55	51	44	48	Distant Traffic 45-47. Cars 40-45, trucks to 55. Insects ~ 47. Donaldson mine inaudible.
01/03/06 11.05 pm Night W= Calm Temp=22°C	Ambient	55	54	50	42	46	Distant traffic 42-44. Cars 40-45, trucks to 55. Insects ~ 47. Distant trucks audible, possibly mining <40 Mine LA10 contribution~ 40.

Traffic noise generated by local and distant traffic was observed as a significant contributor to noise levels at most receiver locations. Donaldson Mine operations were observed to be audible at Location A (Weakleys Drive) and Location K (Bartter) during the day, evening and night-time and was inaudible during all other survey periods and at all other locations. Results of operator attended

noise surveys have shown that contributed noise levels from Donaldson Mine operations do not exceed noise emission goals.

12th May and 17th June 2006

Operator attended noise measurements were conducted during the daytime period on the 12th May 2006. Operator attended noise measurements for night-time and evening periods were conducted on the 17th May 2006.

The results of the operator attended noise measurements are given in **Tables 36-39**. Noise levels given in the tables include all noise sources such as traffic, insects, birds, and mine operations as well as any other industrial operations. Mine contributions listed in the tables are from Donaldson Mine and are stated only when a contribution could be quantified.

TABLE 36: ATTENDED SURVEY RESULTS – (LOCATION A) 98 WEAKLEYS DRIVE, BERESFIELD.

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
12/05/06 10:17am Day W = Calm Temp = 20°C	Ambient	74	58	56	50	54	Traffic (Weakleys Drive) ~53 Ambient farm noise ~50 Donaldson mine inaudible
17/05/06 8:20 pm Evening W = Calm Temp = 12°C	Ambient	89	83	73	54	71	Passing cars to 84 Passing trucks to 89 Distant traffic, New England Highway <50 Donaldson mine inaudible
17/05/06 10:03 pm Night W = Calm Temp = 11°C	Ambient	8191	84	73	51	71	Passing cars to 84. Passing trucks to 91. Donaldson mine inaudible.

TABLE 37: ATTENDED SURVEY RESULTS – (LOCATION c) 3 LENAGHANS DRIVE

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
12/05/06 10:42 am Day W = Calm Temp = 20°C	Ambient	86	82	67	49	68	Passing traffic; cars to 83, trucks to 58. Distant traffic noise ~52-58 Donaldson mine inaudible
1705/06 8:56 pm Evening W = Calm Temp = 12°C	Ambient	85	76	57	45	62	Passing car to 82. Distant traffic noise ~56-56. Insects < 45, Frogs < 45 Donaldson mine inaudible
1705/06 10:25 pm Night W = Calm Temp = 11°C	Ambient	81	71	56	48	54	Distant traffic (F3) ~53 Insects ~45 Passing car to 84. Donaldson mine inaudible

TABLE 38: ATTENDED SURVEY RESULTS – (LOCATION F) LOT 684 BLACK HILL ROAD< BLACK HILL

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
12/05/06 11:27 am Day W = Calm Temp = 20°C	Ambient	78	59	47	39	52	Passing cars to 78. Dog bark ~52 Resident activities ~ 45-50. Traffic(John Renshaw Drive) ~42-44. Donaldson mine inaudible.
1705/06 9:16 pm Evening W = Calm Temp = 12°C	Ambient	60	49	46	39	44	Trucks (John Renshaw Drive to 60. Distant Traffic (John Renshaw Drive) 42-56 Insects < 40 Trucks possibly turning into mine: LA10 contribution ~ 42-43
1705/06 10:49 pm Night W = Calm Temp = 11°C	Ambient	61	57	52	41	48	Distant traffic (John Renshaw Drive) to 60. Insects ~41-44 Distant trucks audible, possibly mining; LA10 contribution ~42-43

TABLE 39: **ATTENDED SURVEY RESULTS – (LOCATION K) BARRTER ENTERPRISES FARM 6, BLACK HILL.**

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
12/05/06 11:03 am Day W = Calm Temp = 20°C	Ambient	58	52	49	40	46	Distant traffic 46 to 54. Insets 42-45 Donaldson mine inaudible
17/05/06 9:42 pm Evening W = Calm Temp = 12°C	Ambient	98	80	67	48	69	Distant traffic 52. Passing cars 89. Passing truck 98. Insect ~45. Truck audible; possibly mining; LA10 contribution ~50
17/05/06 11:19 pm Night W = Calm Temp = 11°C	Ambient	78	70	58	44	58	Passing cars to 77. Insects ~44. Distant trucks audible; possibly mining; LA10 contribution ~50

Noise generated by local and distant traffic was a significant contributor to noise levels at most monitored locations. Donaldson Mine operations were observed to be audible at Location K (Bartter) and Location F (lot 684 Blackhill Road) during the night time. Blackhill Roads' quantified LA10 contribution is less than 2 dBA above the criteria. Results of operator attended noise surveys identify that contributed noise levels from Donaldson Mine do not exceed noise emission goals for any period.

Thursday 13th September 2006 and Tuesday 19th September 2006

Operator attended noise measurements were conducted during the daytime on Thursday 13th September and evening/night periods on Tuesday 19th September 2006.

The results of the operator attended noise measurements are given in **Tables 40 to 43**. Ambient noise levels given in the tables include all noise sources such as traffic, insects, birds, and mine operations as well as any other industrial operations. Mine contributions listed in the tables are from Donaldson Mine and are stated only when a contribution could be quantified.

TABLE 40: ATTENDED SURVEY RESULTS – LOCATION A - 98 WEAKLEYS DRIVE BERESFIELD.

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
13/09/06 10:10 am Day W = Calm Temp = 22°C	Ambient	67	60	54	46	53	Traffic (Weakleys Drive) ~49-52 Neighbour activities ~60-61 Ambient farm noises ~53-54 Donaldson mine inaudible.
19/09/06 8:28 pm Evening W = Calm Temp = 17°C	Ambient	90	82	75	54	71	Passing cars to 82. Passing trucks to 90. All noise descriptors set by passing traffic. Donaldson mine inaudible.
19/09/06 10:07 pm Night W = SW 2 m/s Temp = 15°C	Ambient	92	84	74	50	71	Passing cars to 84. Passing trucks to 92. Donaldson mine inaudible.

TABLE 41: ATTENDED SURVEY RESULTS – LOCATION C- LENAGHANS DRIVE

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
13/09/06 10:40 am Day W = Calm Temp = 22°C	Ambient	87	82	66	48	68	Passing traffic; cars to 83, trucks to 87. Distant traffic noise (F3) ~ 59-50. Ambient birds~45 Donaldson mine inaudible.
19/09/06 8:49 pm Evening W = Calm Temp = 17°C	Ambient	82	69	59	54	60	Passing cars to 82. Distant traffic noise (F3) ~50-52. Ambient insects, Frogs ~ 54-57. Donaldson mine inaudible.
19/09/06 10:31 pm Night W = SW 2 m/s Temp = 15°C	Ambient	84	60	59	52	56	Distant traffic (F3) ~53-55. Ambient insects, frogs~50-52. Passing car to 84. Donaldson mine inaudible.

TABLE 42: **ATTENDED SURVEY RESULTS – LOCATION F – LOT 684 BLACK HILL ROAD, BLACK HILL**

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
13/9/06 11:30 am Day W = Calm Temp = 22°C	Ambient	80	66	50	40	55	Passing cars to 80. Traffic (John Renshaw Drive) ~41-43. Distant trucks ~44-49. Donaldson mine inaudible.
13/9/06 9:16 pm Evening W = SW 1 m/s Temp = 17°C	Ambient	75	59	49	44	53	Passing cars to 75. Trucks (John Renshaw drive) ~48-50. Ambient insects; Frogs Dominant ~44-49. Donaldson mine inaudible.
13/9/06 10:58 pm Night W = SW 2 m/s Temp = 15°C	Ambient	78	53	49	41	53	Distant traffic (John Renshaw Drive) ~50 Trucks (John Renshaw Drive) to 78. Frogs/ Insects ~50-53 Distant trucks ~44-49 Donaldson mine inaudible.

TABLE 43: ATTENDED SURVEY RESULTS – LOCATION K BARRTER ENTERPRISES FARM 6, BLACK HILL.

Date/Start Time Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
13/09/06 10:40 am Day W = Calm Temp = 22°C	Ambient	74	66	53	43	45	Distant Traffic ~45-46. Cows~74. Ambient Birds ~53-54. Truck Reverse Alarm, possibly miming; LA10 contribution <40.
19/09/06 8:49 pm Evening W = Calm Temp = 17°C	Ambient	94	77	66	45	65	Passing Traffic; cars to 78, trucks to 94. Insects ~45 Helicopter flyover~61 Possible Mine contribution; Trucks(engine noise) ~42-43 Reverse alarm <40. LA10 contribution ~40-42.
19/09/06 10:31 pm Night W = SW 2 m/s Temp = 15°C	Ambient	60	57	54	45	52	Passing cars to 60. Insects ~45. Possible mine contribution; Trucks(engine noise) ~42-43 Reverse alarm <40. LA10 contribution ~40-42.

Noise generated by local and distant traffic was a significant contributor to noise levels at all monitored locations. Also, increase in the ambient air temperature has the effect of increasing insect/frog activity which is also evident within the attended noise survey results at all locations

No mine noise contribution was audible at locations A (Weakleys Dr) and C (Lenaghans Dr) which is likely given the distance of the monitoring locations to Donaldson mine. It is anticipated that this trend would remain consistent throughout the monitoring period.

Observations made during the Location K (Bartter) operator attended noise surveys detect possible mine contribution during day, evening and night-time periods. The daytime attended survey observed "quacker" type truck reversing alarms with an approximate L_{A10} contribution less than 40 dBA. Evening and night-time noise surveys observed truck engine noise during loading/unloading activity with an approximate L_{A10} contribution of 40 – 42 dBA. In consistency with the day-time, truck reverse alarms were also audible with a L_{10} contribution less than 40dBA. These levels exceed the Donaldson mine consent limit by approximately 2 dBA. Notwithstanding this, given the sensitivity of the human ear an exceedance of 2 dBA is seen as negligible and would not be noticed by most people.

Operator attended surveys at Location F (Blackhill Rd) observed trucks during loading/unloading activities during day, evening and night-time periods. No truck reverse alarms were observed at Location F during the attended noise surveys. Given the relative distance and direction to Donaldson mine from the monitoring location it is highly unlikely that the observed contribution is

from the Donaldson mine site. In addition, contributions observed at location F (Blackhill Rd) were louder than contributions observed at location K (Bartter). No reverse alarms were audible atlocation F (Blackhill Rd) which supports the fact that the contribution audible a location could not be from Donaldson Mine.

Prior to the September 2006 monitoring program, Heggies were informed that "beeper" type reverse alarms were recently replaced with the "quaker" type for all mobile plant and equipment. During the attended noise surveys at Location K (Bartter) it was evident that this change had occurred where a qualified contribution of less than 40 dBA was audible. No comparison can be made to last quarter attended noise monitoring results, as no reverse alarms were audible at any of the monitoring locations. Conclusions from the current monitoring period find that although the "quaker" reverse alarms are audible, they are within the relevant consent limit at Location K.

Complaints Based Noise Monitoring

There was no complaints based noise monitoring during this reporting period.

3.2.12 Visual and Stray Lighting

Impacts on visual amenity were identified as one of the issues for residents in the Black Hill area during the EIS process. To date there has not been any complaints related to visual impact issues received by the mine. This includes complaints relating to stray lighting.

Control Strategy:

Visual impact is controlled by ensuring that (where possible) the waste emplacement dumps are shielded by the natural topography and trees. Once areas become available, rehabilitation will commence as soon as possible to ensure that the visibility of the dumps are reduced.

To this end, the out of pit dump has deliberately been constructed at an appropriate RL to ensure that it can not be seen from Black Hill area.

Environmental Performance:

Visual impact and stray lighting is not considered an issue for the project at the moment. Should it become an issue appropriate controls would be adopted to minimise any impacts.

3.2.13 Cultural and Natural Heritage Conservation

The following section outlines the commitment made by Donaldson to the protection of cultural and natural heritage of the area. A copy of a plan along with a summary table showing the known Aboriginal Cultural heritage sites is attached as **Appendix 3** of this report.

To date thirty-one sites of Aboriginal Cultural Heritage have been identified on property owned by Donaldson Coal. Seven of these sites are in areas that were impacted on by mining during the reporting period. In accordance with s.90 of the National Parks and Wildlife Act (1974), consent to destroy was granted for those sites being impacted on by the mine (three sites).

Archaeological Studies

Donaldson has been the subject of four archaeological studies since 1998. During each study the principle aims have been to:

a) Consult and involve the Aboriginal Community at every stage of the investigation and to provide continuous opportunities for the Aboriginal Community (through the MLC) to participate in the interpretation and decision making process.

b) Identify and record by field survey the material evidence of Aboriginal cultural heritage or locations of potential evidence with the land owned by Donaldson.

c) Assess the archaeological significance and understand the Aboriginal significance of material evidence of Aboriginal cultural heritage of the study area.

d) Assess the impacts of the mine on Aboriginal Cultural Heritage.

Management Plans

In accordance with conditions 84, 85 and 86 of the Development Consent, Donaldson Coal has prepared an Aboriginal Sites Management Plan for the mine. Separate plans are produced for each year of operation at the mine. This provides a better opportunity to address specific issues for each year as well as an opportunity to review and address the management of Aboriginal Sites both inside the mine impact area and within associated conservation areas surrounding the mine.

An Aboriginal Sites Management Plan for Year 5 was prepared in consultation with the Mindaribba Local Aboriginal Land Council and has been submitted to the National Parks and Wildlife Service.

Control Strategy:

The following control measures have been employed at the Donaldson Coal Mine in order to ensure that reasonable duty of care is taken to ensure sites of aboriginal cultural significance are not knowingly disturbed or destroyed.

The MLC is actively involved in the management of Aboriginal Sites at Donaldson;

Representatives of the Lands Council are invited on site to monitor clearing and topsoil stripping activities; and

Environmental Performance:

Donaldson and MLC enjoy a good working relationship and to date there have been no complaints or incidents recorded in relation to the management of sites of aboriginal cultural heritage.

3.2.14 Spontaneous Combustion

Donaldson has not experienced spontaneous combustion in any of its stockpiles or in the coal seams in the pit itself.

Control Strategy:

Notwithstanding this, the potential for spontaneous combustion is controlled as follows:

- ROM and product coal stockpiles are expected to be of small size and of limited turnaround time;
- Currently the bulk of the coal is pre-sold and as such is not required to be stockpiled for periods longer than two (2) months;
- The pit geologist is responsible for inspecting coal stockpile areas and reporting any evidence of obvious heating or spontaneous combustion;
- Coal stockpiles will be sprayed with water, particularly in hot, dry weather;
- Care is taken to ensure coal stockpiles are established in clear, open areas where the threat from bushfire is minimal;
- Should coal on the stockpile begin to combust, it will be removed using earthmoving equipment readily available at the mine and quenched using the sprays from the water cart; and
- Should occurrences become frequent, stockpiles will be shaped and compacted as required to minimise spontaneous combustion.

Where the decision is made to spoil thin coal seams the pit geologist is responsible for making the contractor aware of the possibility for spontaneous combustion and is to ensure that the material is placed over a dump face where it will be buried.

Environmental Performance:

There have been no recorded incidents of spontaneous combustion during the reporting period.

3.2.15 Bushfire

A Bushfire Management Plan was prepared in 2004 for the areas owned by Donaldson Coal. This includes both those areas to be disturbed by mining activities and the area set-aside as conservation areas. The management plan was submitted to the NSW Rural Fire Service (RFS) for review and part f the review involved a site inspection by the RFS. The Cessnock/Maitland Bushfire Management Committee ratified the Bush Fire management Plan for the Donaldson Coal site at it's meeting in October 2006. The Bushfire Management Plan takes into consideration the requirement for hazard reduction burns, natural fire regime and the need to maintain the ecological value of the site for flora and fauna.

Control Strategy:

Cooks Construction operates a 38,000L water cart for dust suppression on site. The water cart is fitted with a monitor (spray) which can be used as required to control fires on site. In addition, earthmoving equipment can be provided at short notice to construct fire breaks or access.

No hazard burn reduction was undertaken during the period of this report but an area was identified adjacent to houses at the Avalon Estate to the east of mining operations where a 25m strip was cleared for an APZ (Asset Protection Zone). Rural Fire Service locks were fitted to Donaldson Coal gates accessing this area. Hazard reduction will be further implemented in the next AEMR reporting period as determined by the Bushfire Management Plan and the advice of the local RFS office. The program will maintain reduced fuel loading and protect mine assets and adjoining private properties.

A 20m fuel free and 15m fuel reduced zone has been established around the Donaldson Coal administration office in accordance with the requirements of the Cessnock City Council.

Care is to be taken to ensure fires (both those lit accidentally or deliberately) are kept out of areas that have been recently revegetated. Fire Management trails will be established to provide access into these areas as well as fire breaks should they be required. In addition, care will be taken to keep fire out of the active pit area, or run of mine stockpiles and overburden emplacement areas. This is to ensure that the risk of any carbonaceous catching alight is kept to an absolute minimum.

Environmental Performance:

There were no reported fires on Donaldson Coal property during the period of this report.

3.2.16 Mine Subsidence

Mine subsidence is not considered an issue at Donaldson Coal Mine because the mine is by open cut methods only.

3.2.17 Public Safety

Donaldson has fenced the eastern and southern boundaries of the mining lease, which are the most accessible to the public.

Sign-posting advising the public of the presence of the mine have been placed at the entrance and around the perimeter of the lease. The fences are inspected on a weekly basis and repairs undertaken where necessary.

3.3 REPORTABLE INCIDENTS

There were no externally reportable environmental incidents recorded at the mine during the reporting period. There were five internal environmental incidents reported as a requirement of the Environmental Management Strategy. **Table 44** shows the nature of those incidents.

TABLE 44: LIST OF INTERNAL ENVIRONMENTAL INCIDENTS REPORTED.

Nature of the Incident	Number Recorded
Oil spill to ground during Service & Maintenance	1
Oil spill during dumping with release of transmission oil through fracture.	1

In all cases, an internal environmental incident form was completed in accordance with the requirements of the site Environmental Management Strategy (EMS). These forms enable preventative actions to be suggested and the recommendations implemented in order to continually improve environmental performance at the mine. The Donaldson Coal Environmental Manager is working with the mining contractor to address area(s) of repeat incidents.

The number of internally reportable environmental incidents at Donaldson Coal during the 2006 AEMR reporting period is less compared to the previous reporting period, where 6 internally reportable environmental incidents were recorded.

4 COMMUNITY RELATIONS

This section details the various aspects of the community relations program at the mine, including but not limited to, complaints received on the community hotline, community liaison, detail on the Community Consultative Committee (CCC) and the social and economic benefits resulting from the presence of the mine in the area.

4.1 ENVIRONMENTAL COMPLAINTS

There have been two complaints received by Donaldson Coal on the 1800 111 271 community hotline during the AEMR reporting period, with two also in the previous AEMR reporting period. Both complaints were from blast impacts. Two individuals were responsible for the complaints. Information for each complaint and the actions taken are provided in **Appendix 4**. All complaints were followed up and remedial or additional monitoring was undertaken as required.

4.2 COMMUNITY LIAISON

The following section relates specifically to information relevant to the Community Consultative Committee (CCC) and the community liaison program implemented by the mine.

4.2.1 Community Consultative Committee (CCC).

There was one CCC meeting held at the Donaldson Mine site during the reporting period. Included in **Table 45** are the details of each CCC meeting held during the 2006 AEMR reporting period.

TABLE 45: CCC MEETING DETAILS

Date	Location	No. of attendees
2nd March 2006	Donaldson Coal	5

4.2.2 Site Tours/Inspections

The CCC was invited to visit the mine on this occasion during the period of this report. Donaldson proposes to continue site inspections on a regular basis so the CCC members can see the operation first hand.

4.2.3 Community Newsletters

There were no community newsletters prepared in the AEMR reporting period.

A copy of the "new employee" environmental induction booklet was previously made available to the community in both the Thornton and Beresfield public libraries. The booklet contains information on the environmental management of the mine as well as detail on the project and contact details for the mine.

4.2.4 Donaldson Coal Internet Site (www.doncoal.com.au)

The Donaldson Coal Internet site was launched in August 2000. It has since been reviewed and improved, with additional information and a site upgrade in August 2004. The site has been developed to provide information to the wider community. It contains up to date copies of the CCC meeting minutes, copies of the newsletters, the most recent Environmental Monitoring Report, pictures of the mine and general information. It also

contains a list of contact details should anyone wish to contact the mine directly either by telephone or e-mail.

4.3 SOCIAL/ECONOMICAL CONTRIBUTIONS

This section details the employment status and demographics for all staff employed both directly and indirectly at the Donaldson Coal Mine. It is important to note that Donaldson operates only a day and afternoon shift roster for overburden and interburden removal. Coal removal is undertaken on all shifts (including night shift). Should the option to operate overburden and interburden on a night shift be taken up, the employee numbers would increase.

4.3.1 Employment Status and Demography

Donaldson Coal directly employs or contracts ten staff mainly within a technical services and management/supervision role. **Table 46** shows the breakdown of numbers for key functional areas as well as the percentage living in the Maitland Area.

TABLE 46: SUMMARY OF DONALDSON COAL EMPLOYEE STATISTICS

Functional Area:	No.	Place of Residence
Management	3	Maitland (33%), Other (66%)
Environmental	1	Other (100%)
Technical Services	8	Maitland (71%), Other (29%)

Cooks Construction Pty Ltd currently directly employs seventy-four full-time employees in the production, maintenance and management areas. **Table 47** shows the breakdown of numbers for key functional areas as well as the percentage living in the Maitland Area.

TABLE 47: SUMMARY OF COOKS CONSTRUCTION EMPLOYEE STATISTICS

Functional Area:	No.	Place of Residence
Management/Supervisor	13	Maitland (62%), Other (38%)
Maintenance/Production	62	Maitland (46%) Other (54%)

In addition to those directly employed by either Donaldson or Cooks Construction there are a large number of additional sub contractors employed indirectly at the project. They include, but are not limited, the following areas:

a) Coal Haulage (Daily);

b) Coal Handling and Washing (Daily);

c) Maintenance contractors and fitters (Daily as required);

d) Cleaning staff;

e) Other consultants and contractors (as required).

The total workforce employed fulltime at the Open Cut Mine is 116 compared to an estimated workforce in the EIS of 114 fulltime jobs over the operating life of the mine.

4.3.2 Roll-on Employment Effects

The initial studies undertaken as part of the EIS detailed the importance of the coal mining industry to the economy of New South Wales. Donaldson Coal mine came on stream during a period where some of the mines in the upper valley were downsizing and offering redundancies. This has enabled a number of skilled workers an opportunity that may have otherwise not been available.

In addition there has been the roll on effect. The EIS used a multiplier (3.09) derived from the Australian Bureau of Statistics in order to calculate the roll on benefit of the operation. Based on the current numbers of direct employees (day and afternoon shift) it could be expected that up to the equivalent of an additional 244 jobs have been created as a result of the project taking place.

4.3.3 Value Adding Programs Directly Benefiting the Community

Donaldson Coal has also made a number of contributions to the local community. Donaldson has undertaken the following activities during the reporting period.

- Donaldson continues to be the major sponsor of an education initiative for local primary schools in the Maitland and surrounding area aimed at providing teaching resource aids, placing the local Maitland Mercury (newspaper) in Classrooms;
- Small financial contributions have been made to various local community based organisations in the area surrounding the mine.
- Donaldson has provided an avenue for training and employment for five individuals from the local Mindaribba Aboriginal Lands Council; and

5 REHABILITATION

This section describes the current rehabilitation activities during the reporting period at the Donaldson Coal Mine.

5.1 BUILDINGS

There were no changes to site buildings during this reporting period.

5.2 REHABILITATION OF DISTURBED LAND

It is proposed to re-establish a cover of native forest vegetation to the majority of the post-mining landform.

During the reporting period a total of 9 hectares were rehabilitated including the provision of drainage controls to provide a stable landform in line with MOP requirements.

Several areas of incomplete topsoiling and mulching were identified in the previous DPI annual inspection. The areas were completed as part of this year's rehabilitation activities.

5.2.1 Management of Potentially Acid Material

In late 2003 a final report was provided by URS Australia Pty Limited on the management of potentially acidic material. In line with the recommendations, the out of pit dump was limed. A copy of the report was submitted to the DMR and the final recommendations are implemented in rehabilitation practices. During the reporting period all areas of rehabilitation were treated following the recommendations of the URS report.

Actions undertaken during the period 1/11/2005 to 31/10/2006 included the continued selective use of the top 7 meters of the upper overburden and interburden strata for capping over the dump areas.

5.3 OTHER INFRASTRUCTURE

Other than those already mention in this report, there was some other infrastructure works undertaken during the reporting period. These works included the following:

- Routine maintenance of the fence along John Renshaw Drive

All works were undertaken in accordance with the requirements of the approved MOP.

5.4 REHABILITATION STATUS AT END OF THE REPORTING PERIOD

The principal areas for rehabilitation are the two emplacement areas outside of the active mining area. These are known as the Top Dump, in the northern area of the mine, and the Out of Pit Emplacement, in the southern area of the mine. Due to the progression of mining operations less area was available in this AEMR reporting period due to the Top Dump not reaching final landform.

Approximately 5ha of rehabilitation was completed in this AEMR reporting period in the top dump area with a rehabilitation area of 60 ha planned for 2006-2007. The area rehabilitated in 2005-6 was less than the projected MOP target due to the incomplete sections of the final landform in the Top Dump and Out of Pit Emplacement being available. The rehabilitation report for 2006 is provided in **Appendix 7**. The latest rehabilitation plan, October 2006, and the forecast plan for October 2007 are provided in **Appendix 8**.

There is a small depression on the long dump that is a purpose built detention structure. This dam has been clay sealed to prevent percolation of runoff through the dump. The Draft DLWC *Draft Guidelines of establishing Stable Drainage Lines on Rehabilitated Mine site (1999)* promotes temporary detention runoff on spoil dumps as a means of reducing velocity and discharge off site.

An excellent result from direct tree seeding areas has been obtained by incorporating direct tree seeding with cover crops. This prevents weed growth, provides faster ground stabilisation, less soil erosion and sedimentation issues and has produced good uniform germination of all tree and shrub species. This technique will be continued at Donaldson Coal.

In 2007, the overburden material will continue to be placed in the dumps in a method that is commensurate with the final landform design. The design will minimise the final trim works required to achieve the designed post mining landform. Drainage control and erosion protection measures are being incorporated into the final landform design. This includes, but is not limited to, contour and graded banks, drains and sediment retention basins. Slopes are generally regraded to no greater than 10 degrees. Areas available for rehabilitation will be topsoiled and immediately seeded to reduce the risk of soil erosion.

The runoff from the Out of Pit Emplacement area is currently being collected and pumped to the dirty water dam due the mining out of the creek tributaries. Investigations will be undertaken over the ensuing twelve months to ascertain the buffer availability of the Weakley's Flat Creek to receive water from the out of pit emplacement areas.

5.5 REHABILITATION TRIALS AND RESEARCH

A research project is being undertaken on site by Mr. Mark Burns of Global Soils as part of his Doctoral studies and the trial will generally look at treating tubestock and seed with citric acid. Results of the trial will be included in future Annual Environmental Management Report submitted to the Department.

5.6 FURTHER DEVELOPMENT OF THE FINAL REHABILITATION PLAN

Donaldson Coal recognises the need to manage rehabilitation of the Open Cut to ensure that the mine can function effectively and operate in accordance with statutory requirements. To this end Donaldson engaged Global Soil Systems (GSS) to prepare a Rehabilitation Management Plan (RMP) in accordance with the coal mining industry's best practice.

The report aims to specifically address rehabilitation in three (3) key areas including pre-mining operations (eg. clearing, seed collection, topsoil management, etc) post mining operations (eg. landform design, visual impact slope angles, water management and revegetation, etc) and mine closure and decommissioning (including but not limited to final void issues).

The rehabilitation strategies and concepts proposed for Donaldson Mine were formulated according to results of industry wide research and experience. All future site and industry research results will be utilised as input into a "cycle of continuous improvement" so that rehabilitation best practice is implemented at the site.

6. ACTIVITIES PROPOSED IN THE NEXT AEMR PERIOD

The following initiatives by Donaldson Coal are proposed over the next twelve months.

- The 11kV Powerline along John Renshaw Drive is planned for relocation in the next AEMR reporting period.
- A new mine entry is proposed off John Renshaw Drive.
- Receival of coal is planned to begin from the Tasman Coal mine operations.

7. DEVELOPMENT CONSENT COMPLIANCE REVIEW

A development consent review was not required in this reporting period but was scheduled for late 2006. Details of the findings from this review will be included in the 2007 AEMR.

8. REFERENCES

- Global Soil Systems (May 2000a) ***Erosion & Sediment Control Plan,*** Unpublished report for Donaldson Coal Pty Ltd.
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- Robyn Tuft & Associates (2004a) ***Donaldson Coal Mine Macroinvertebrate Sampling program Operations Survey***: Autumn ***2006,*** Unpublished report for Donaldson Coal Pty Ltd.
- Robyn Tuft & Associates (2004b) ***Donaldson Coal Mine Macroinvertebrate Sampling program Operations Survey***: ***Spring 2005*** Unpublished report for Donaldson Coal Pty Ltd.
- Gunninah (December 2000a) ***Donaldson Open-cut Coal Mine, Beresfield, Flora and Fauna Management Plan.*** Unpublished Report for Donaldson Coal Pty Ltd.
- Gunninah (December 2000b) ***Donaldson Open-cut Coal Mine, Tetratheca juncea Management Plan.*** Unpublished Report for Donaldson Coal Pty Ltd.
- Gunninah (December 2000c) ***Donaldson Open-cut Coal Mine Tetratheca juncea survey and identification report,*** Unpublished Report for Donaldson Coal Pty Ltd.
- Global Soil Systems (2000b) ***Donaldson Coal Waste Management Plan***, Unpublished report completed by Donaldson Coal.
- Richard Heggies & Associates Pty Ltd (2003) ***Noise Monitoring Survey, Fourth Quarter 2005, Donaldson Mine***, Unpublished reported completed by Donaldson Coal
- Richard Heggies & Associates Pty Ltd (2004a) ***Noise Monitoring Survey, First Quarter 2006, Donaldson Mine***, Unpublished reported completed by Donaldson Coal
- Richard Heggies & Associates Pty Ltd (2004b) ***Noise Monitoring Survey, Second Quarter 2006, Donaldson Mine***, Unpublished reported completed by Donaldson Coal
- Richard Heggies & Associates Pty Ltd (2004c) ***Noise Monitoring Survey, Third Quarter 2006, Donaldson Mine***, Unpublished reported completed by Donaldson Coal
- EcoBiological ***2005 Half Yearly Fauna Monitoring Report***, Unpublished report for Donaldson Coal Pty Ltd
- EcoBiological ***The Experimental Translocation of Tetratheca juncea (tremandraceae) at Donaldson Coal Mine, Beresfield*** *(2005)*, Unpublished report for Donaldson Coal Pty Ltd

APPENDIX 1:

Donaldson Coal
Environmental Policy

Donaldson

Donaldson Coal Pty Ltd
ABN 87 073 088 945

ENVIRONMENTAL POLICY

Donaldson Coal recognises that it is operating in an environment that requires a genuine commitment to the environment. Donaldson aims to achieve and maintain a high standard of environmental care within all aspects of the operation.

Donaldson will achieve this by committing to the following principles:

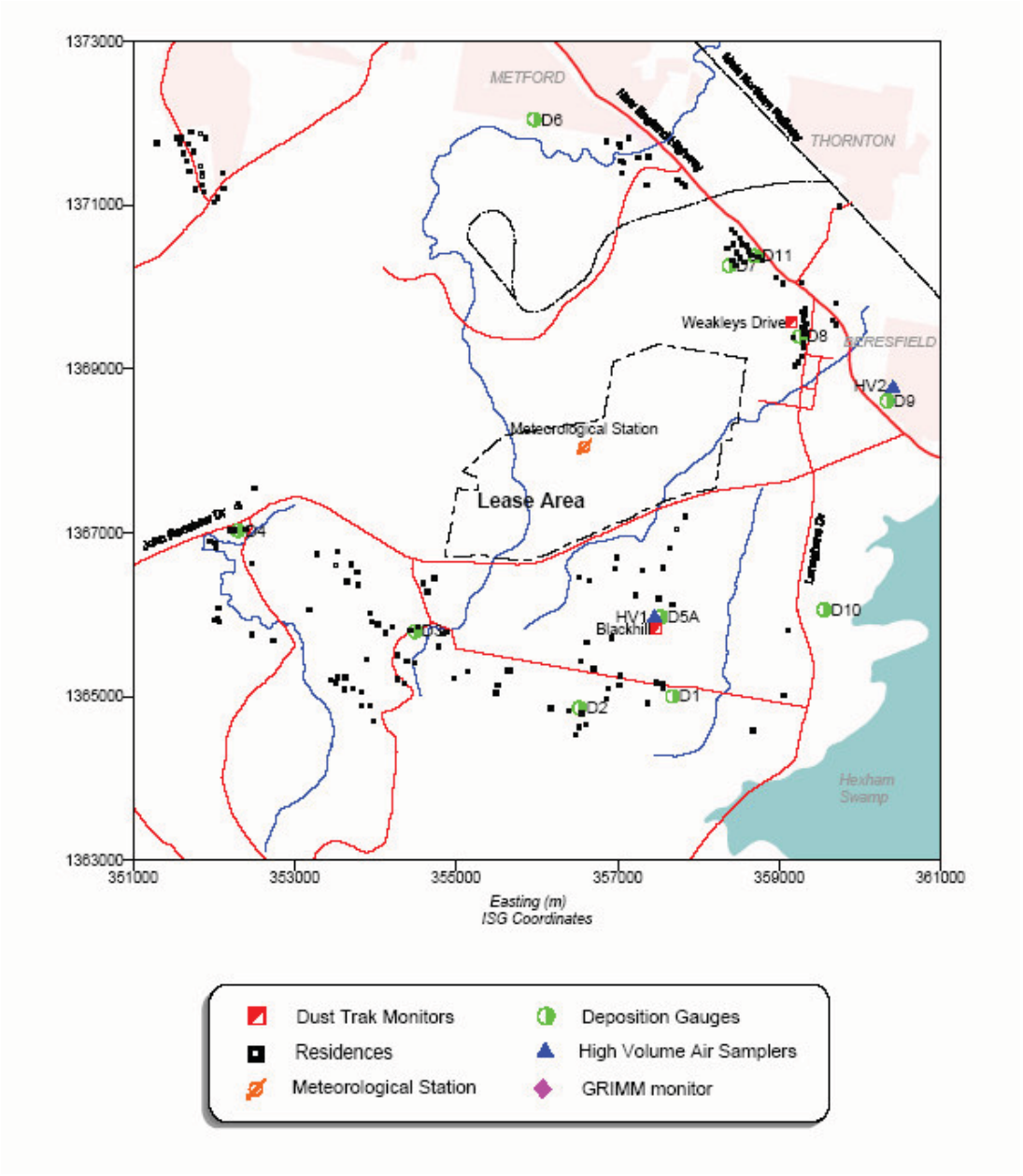
- Compliance with all laws, regulations, consent conditions and standards applicable to the operation.
- Adopting a consultative approach and communicating openly with all stakeholders on the environmental issues;
- Ensuring that all employees, contractors and suppliers of goods and services are fully aware of their responsibilities by initiating regular communications and training;
- Always considering environmental factors when planning or making operational decisions or changes to the mining process;
- Ensuring continuous improvement through implementing and maintaining an Environmental Management Strategy (EMS) which aims to identify, control and monitor the environmental risks arising from the project;
- To develop, maintain and review environmental objectives, targets and performance indicators; and
- Managing all operational processes to minimise wastes, promote reuse and recycling principles so as to reduce the impacts upon the surrounding environments.

BRENDAN McPHERSON
Chief Executive Officer – Donaldson Project.

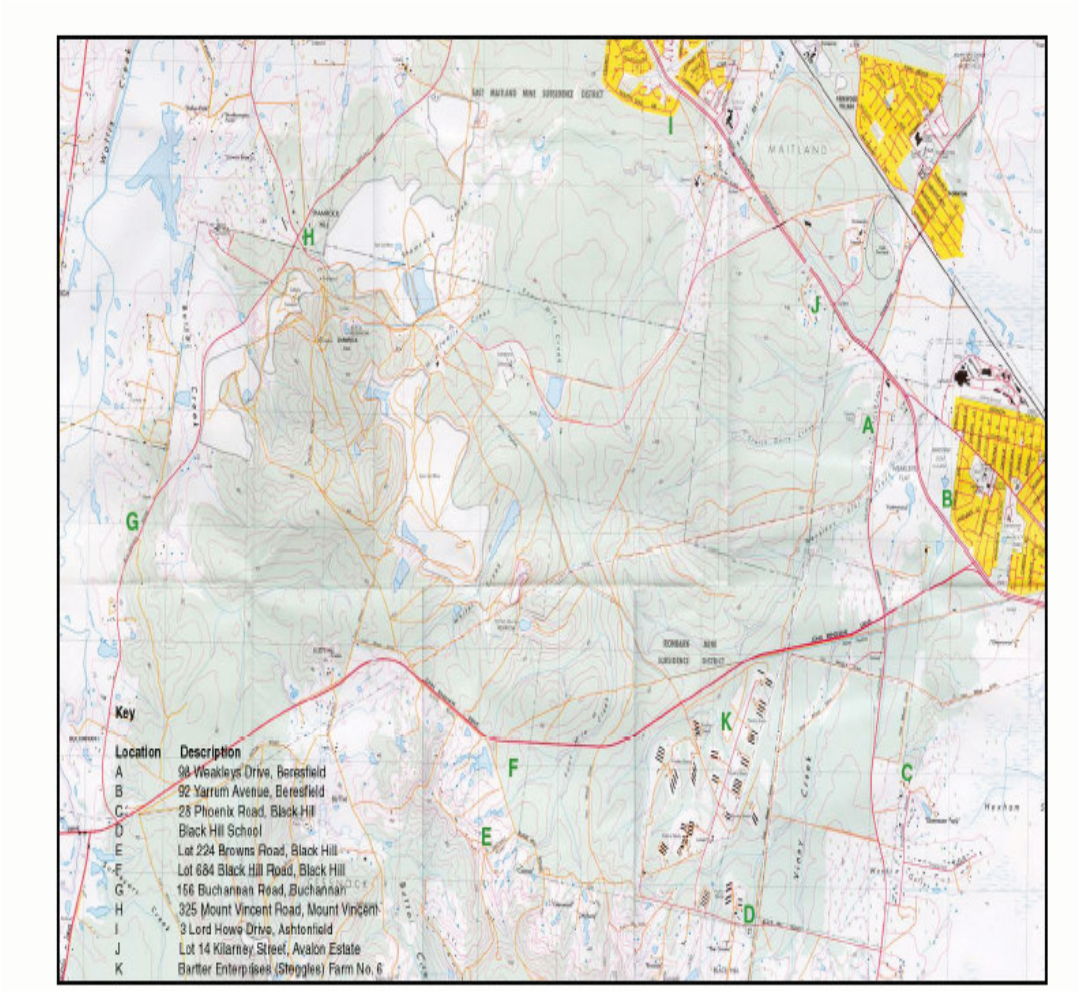
SEPTEMBER 2000.

APPENDIX 2:

Site Locality Plan and Monitoring Locations



Locations of Air Pollution Monitoring Equipment.



Locations of Noise Monitoring Equipment during the 2006 AEMR period.

APPENDIX 3:

Description and Location Plan of known Aboriginal Sites

Aboriginal Sites Within the Donaldson Mine Lease Area

Site Name	Recorder	Location	Description	Comments
Bushland Conservation Area				
FMC3	Effenberger (1997)	368300E 6368900N Bank of Four Mile Creek	Artefact scatter (5 artefacts), one axe grinding groove	
FMC4	Effenberger (1997)	368250E 6368650N Lower slope above Four Mile Creek	Artefact scatter (2 artefacts)	
FMC5	Effenberger (1997)	368500E 6368700N Lower slope above Four Mile Creek	Artefact scatter (2 artefacts)	
FMC6	Effenberger (1997)	368400E 6366100N Upper slope above Four Mile Creek	Artefact scatter (4 artefacts)	
FMC7	Effenberger (1997)	367600E 6366500N Crest between Four Mile Creek and a major tributary	Artefact scatter (3 artefacts)	
FMC8	Effenberger (1997)	367600E 6366850N Upper slope above tributary of Four Mile Creek	Scarred tree	
WFC1	Effenberger (1997)	371200E 6369200N Lower slope above Weakleys Flat Creek	Artefact scatter (3 artefacts)	
ISF3	Umwelt (1998)	368750E 6367650N Lower slope above Four Mile Creek	Isolated find	
ISF4	Umwelt (2001)	370550E 6368625N Mid slope above Weakleys Flat Creek	Isolated find	
Four Mile Creek 1 (38-4-139)	Brayshaw (1985)	368130E 6367020N Bank of Four Mile Creek	Artefact scatter (19 artefacts)	
Four Mile Creek 2 (38-4-140)	Brayshaw (1985)	367820E 6366880N Terrace of Four Mile Creek	Artefact scatter (10 artefacts)	

CA1	Umwelt (2001)	370658E 6368051N Mid slope, south of Weakleys Flat Creek	Isolated find	
CA2	Umwelt (2001)	371132E 6369039N Lower slope, north west of Weakleys Flat Creek	Artefact scatter (2 artefacts)	
CA3	Umwelt (2001)	370985E 6370511N Lower slope above a tributary of Scotch Dairy Creek	Isolated find	
CA4	Umwelt (2001)	369568E 6370040N Mid slope above Scotch Dairy Creek	Isolated find	
CA5	Umwelt (2001)	368391E 6366747N Mid slope, east of Four Mile Creek	Isolated find	
CA6	Umwelt (2001)	368229E 6366592N Lower slope above a tributary of Four Mile Creek	Isolated find	
CA7	Umwelt (2001)	367617E 6366456N Mid slope above Four Mile Creek	Isolated find	
CA8	Umwelt (2001)	370746E 6369747N Lower slope, south of Scotch Dairy Creek	Isolated find	
DMS2	Umwelt (2002)	370966E 6368184N Mid slope, south of Weakleys Flat Creek	Artefact scatter (2 artefacts)	
DMS4	Umwelt (2002)	368649E 6368181N Mid slope, east of Four Mile Creek	Isolated find	
DMS5	Umwelt (2002)	370665E 6368177N Mid slope, south of Weakleys Flat Creek	Isolated find	
DMS6	Umwelt (2002)	370809E 6369721N Mid slope, south of	Scarred tree	

		Scotch Dairy Creek		
Mine Impact Area				
ISF1	(Effenberger 1997)	370500E 6369100N Lower slope above small tributary of Weakleys Flat Creek	Isolated find	Consent to Destroy granted (2002)
ISF2	(Effenberger 1997)	369800E 6368950N Lower slope above tributary of Weakleys Flat Creek	Isolated find	Consent to Destroy granted (2002)
ISF5	Umwelt (2001)	370275E 6368626N Mid slope above Weakleys Flat Creek	Isolated find	Application being prepared for consent to remove
ISF6	Umwelt (2001)	370305E 6368600N Mid slope above Weakleys Flat Creek	Isolated find	Application being prepared for consent to remove
Ironbark 2 (38-4-339)	Ruig (1993)	369190E 6367890N Upper slope above tributary of Weakleys Flat Creek	Isolated find	
DMS1	Umwelt (2002)	369734E 6369122N	Isolated find	Consent to Destroy granted (2002)
DMS3	Umwelt (2002)	369090E 6367962N Mid slope above Four Mile Creek	Isolated find	

APPENDIX 4:

List of Complaints Received by the Mine

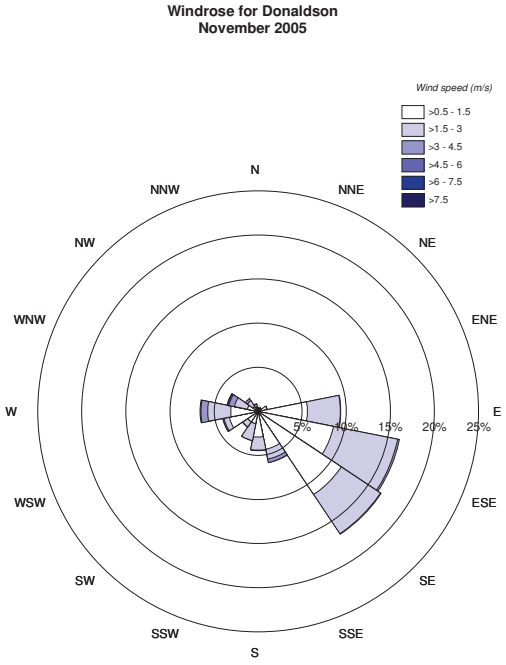
SUMMARY OF COMPLAINTS RECEIVED BY DONALDSON COAL (in the AEMR reporting period)

Number	Location	Date of Complaint	Time	Description	Actions/ Outcomes
50	Avalon Estate	16/11/2005	11:07	Blasting	Blast shook house.
51	Beresfield	16/11/2005	11:06	Blasting	Blast shook house

Note: 2 individual residents made the 2 complaints – one resident at each location.

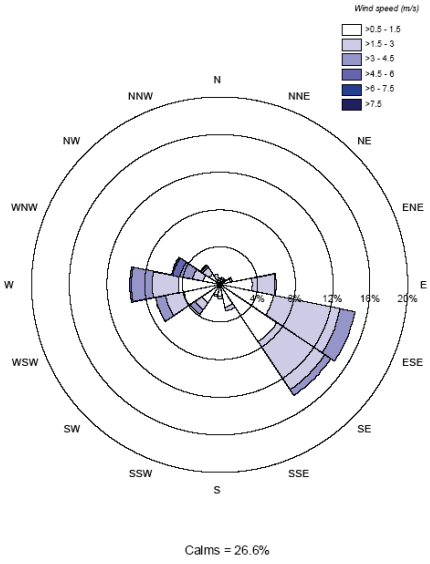
APPENDIX 5:

Wind Speed & Direction (Windrose) Diagrams for the reporting period.



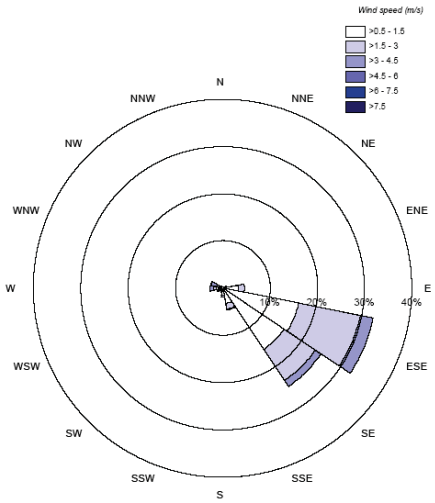
Calms = 22.6%

Windrose for Donaldson, November 2005

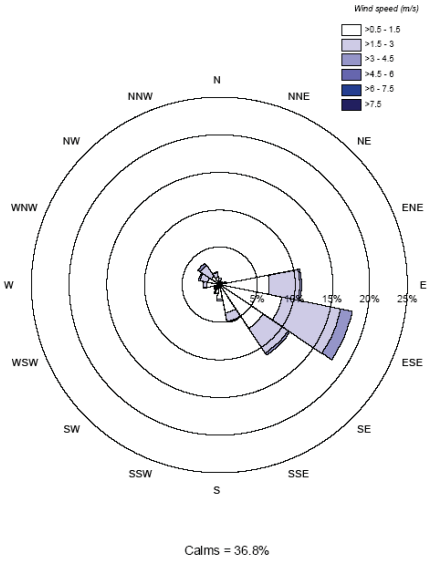


Calms = 26.6%

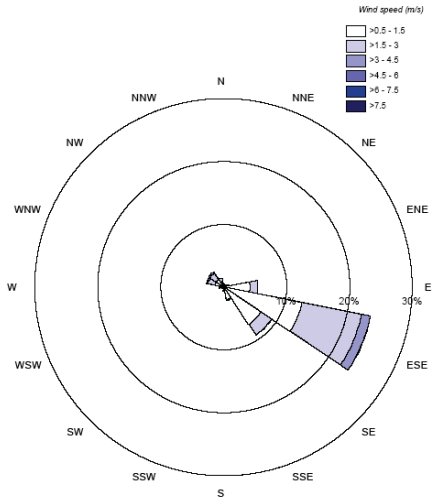
Windrose for Donaldson, December 2005



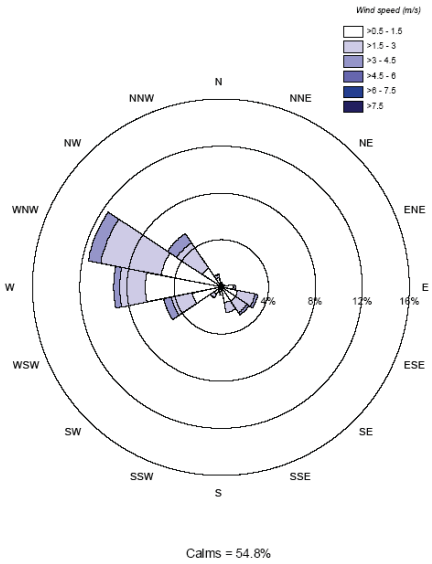
Windrose for Donaldson, January 2006



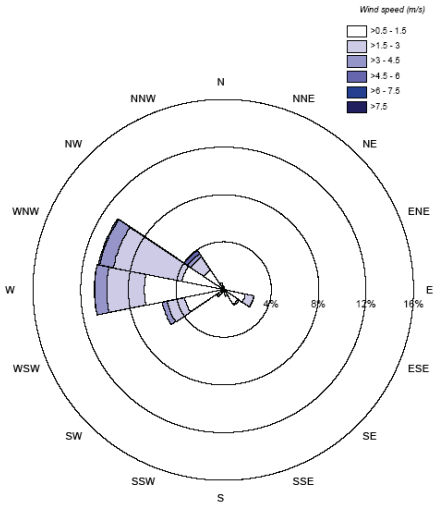
Windrose for Donaldson, February 2006



Windrose for Donaldson, March 2006

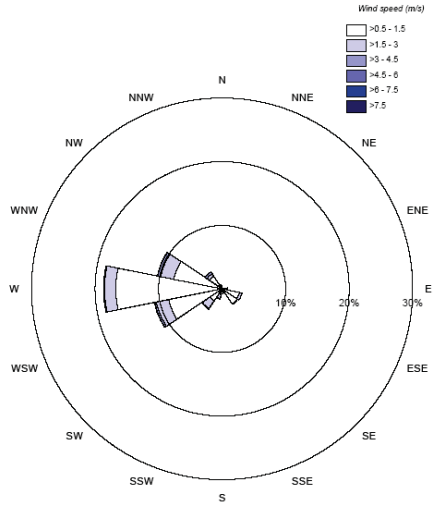


Windrose for Donaldson, April 2006



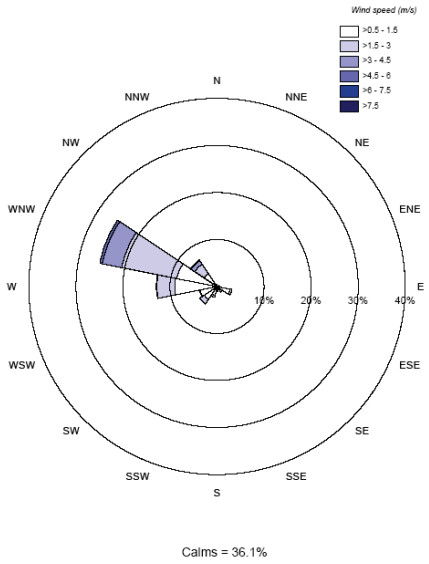
Calms = 62.2%

Windrose for Donaldson, May 2006

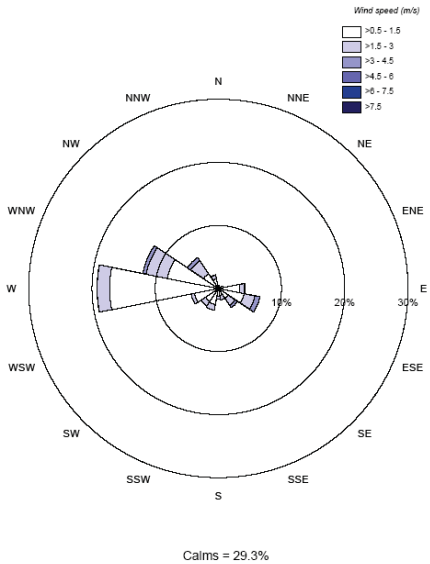


Calms = 41.9%

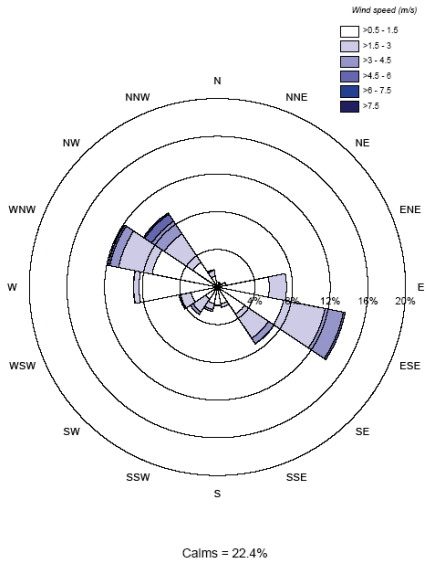
Windrose for Donaldson, June 2006



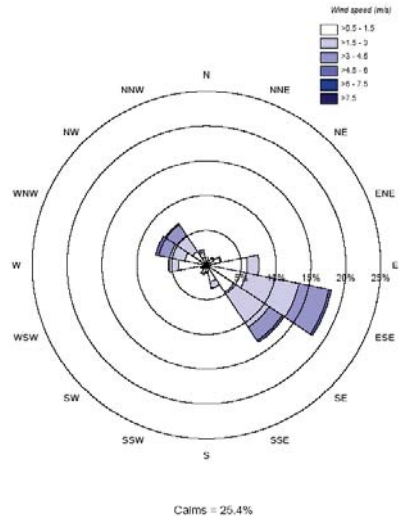
Windrose for Donaldson, July 2006



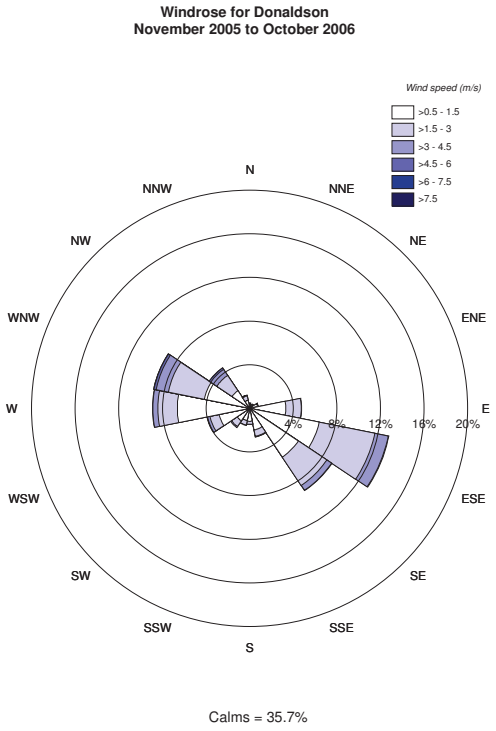
Windrose for Donaldson, August 2006



Windrose for Donaldson, September 2006



Windrose for Donaldson, October 2006



Annual Reporting Period Windrose

APPENDIX 6:

Newsletter

(There were no newsletters produced in this monitoring period)

APPENDIX 7:

Annual Rehabilitation Report

TABLE: REHABILITATION SUMMARY

		Cumulative Area Affected (hectares)			
		To date	Last report	Next Report (estimated)	
A:	**MINE LEASE AREA**				
A1	**Mine Lease(s) Area**	532.8			
B:	**DISTURBED AREAS**				
B1	**Infrastructure area** (other disturbed areas to be rehabilitated at closure including facilities, roads)	44.42	37.58	38.02	
B2:	**Active Mining Area** (excluding items B3 – B5 below)	31.12	23.85	22.96	
B3	**Waste emplacements**, (active/unshaped/in or out-of-pit)	24.39	24.34	32.37	
B4	**Tailings emplacements,** (active/unshaped/uncapped)	0	0	0	
B5	**Shaped waste emplacement** (awaits final vegetation)	52.57	50.68	28.82	
ALL DISTURBED AREAS		**152.5**	**136.45**	**122.17**	F1
C	**REHABILITATION PROGRESS**				
C1	**Total Rehabilitated area** (except for maintenance)	76.25	71.72	135.36	F2
D:	**REHABILITATION ON SLOPES**				
D1	**10 to 18 degrees**	0	0	0	
D2	**Greater than 18 degrees**	0	0	0	
E:	**SURFACE OF REHABILITATED LAND**				
E1	**Pasture and grasses**	0	0	0	
E2	**Native forest/ecosystems**	76.25	71.72	135.36	
E3	**Plantations and crops**	0	0	0	
E4	**Other** (include nonvegetative outcomes)	0	0	0	

TABLE: **MAINTENANCE ACTIVITIES ON REHABILITATED LAND**

(This period's activities and activities proposed in the next reporting period)

NATURE OF TREATMENT	Area Treated (ha)		Comment/control strategies/ treatment detail
	Report period	Next period	
Additional erosion control works (drains re-contouring, rock protection)	0	0	
Re-covering (detail - further topsoil, subsoil sealing etc)	0	0	
Soil treatment (detail - fertiliser, lime, gypsum etc)	0	0	• Lime has been added to areas along the haul road batters and the out of pit dump as part of the AMD Management Plan protocols. • The addition of lime will continue to be a "short term" strategy to control isolated "hot spots" as required (as per URS recommendations).
Treatment/Management (detail – grazing, cropping, slashing etc)	0	0	
Re-seeding/Replanting (detail – species density, season etc)	0	0	
Adversely Affected by Weeds (detail - type and treatment)	0	0	
Feral animal control (detail – additional fencing, trapping, baiting etc)	0	0	

APPENDIX 8:

Rehabilitation Plans