AshtonCoal

WHITE MINING LIMITED

ENVIRONMENTAL AUDIT

of

ASHTON COAL MINE

for

Department of Infrastructure, Planning and Natural Resources

Conducted on 9th and 10th August 2004 for period September 2003 to September 2004

Pacrim ENVIRONMENTAL

September 2004
Report 04/366-2

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ABBREVIATIONS

Acronym	Meaning
ACOL	Ashton Coal Operations Pty Ltd
AEMR	Annual Environmental Management Report
ANZECC	Australia and New Zealand Environment and Conservation Council
AR	Annual Return (DEC)
CMRA	Coal Mine Regulation Act
CCC	Community Consultative Committee
CHPP	Coal Handling and Preparation Plant
DEC	Department of Environment and Conservation (formerly EPA and NPWS)
DIPNR	Department of Infrastructure Planning and Natural Resources (formerly Planning NSW, DUAP and DLWC)
DLWC	Department of Land and Water Conservation (now DIPNR)
DMR	Department of Mineral Resources
EC	Electrical Conductivity (µS/cm)
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMS	Environmental Management System
EPA	Environment Protection Authority (now DEC)
EPL	Environment Protection Licence
EWU	Early Warning Unit
HRSTS	Hunter River Salinity Trading Scheme
HVAS	High volume air sampler
HWE	Henry Walker Eltin
ISO	International Standards Organisation
MOP	Mining Operations Plan
MSC	Muswellbrook Shire Council
Mt	Million tonnes
NPWS	National Parks and Wildlife Service (now DEC)
PIN	Penalty Infringement Notice
PM_{10}	Particulate matter of less than 10 microns mean diameter ($\mu g/m^3$)
ROM	Run of Mine
SEE	Statement of Environmental Effects
TDS	Total Dissolved Solids (mg/L)
TSP	Total Suspended Particulates ($\mu g/m^3$)
TSS	Total Suspended Solids (mg/L)

EXECUTIVE SUMMARY

The Ashton Coal Project is located approximately 14km north west of Singleton and in close proximity to the village of Camberwell. The project consists of an open cut and underground coal mine and associated coal preparation plant, coal stockpiling, rail loading facilities, administration building, stores, bathhouse facilities, and car parking. It is noted that it is not intended to proceed with the development of the underground mine until late 2004.

Construction activities commenced on 8 September 2003, and Open Cut mining operations began in January 2004. The establishment of the eastern boundary bund was a main priority as mining commenced. Notification of commencement of operations was provided in writing to the Director-General of Department of Infrastructure, Planning and Natural Resources (DIPNR) and Singleton Shire Council on 5 December 2003.

Development Consent DA 309-11-2001-1 was granted 11 October 2002 and Mining Lease No1533 was granted on 26 February 2003.

Condition 8.8 of Development Consent DA 309-11-2001 requires that: *one year after commencement of construction and every three years thereafter until five years after completion of mining in the DA area, an environmental audit be undertaken to:*

- *assess compliance with the requirements of this consent, licences and approvals;*
- *assess the development against the predictions made in the EIS and the predictions and commitments made in documents listed in condition 1.2;*
- *assess the development against predictions made in SMIARs required under conditions 3.24 – 3.28 (not yet required);*
- *review the effectiveness of the environmental management of the mine, including any mitigation works.*

The Statutory Environmental Audit of the Ashton Coal Mine for the period September 2003 to September 2004 (being one year after the commencement of construction), was conducted by Pacrim Environmental Pty Ltd with inspections on the 9th and 10th August 2004 and subsequent report preparation. Previous certifications were undertaken by Pacrim Environmental for pre-construction (May 2004) and pre-mining (December 2004).

The audit reviewed compliance with conditions of the Development Consent. DIPNR advised verbally that with respect to Condition 8.8(b) (i), the audit should focus on assessing compliance with the conditions of the Development Consent and not those of the Licence and other approvals.

Additional aspects assessed were the standard of environmental management performance as evidenced from site inspection, and a review of environmental monitoring results to enable a comparison between actual environmental impacts and those predicted in the EIS and other documents listed under Condition 1.2.

Audit Results

The conditions of Development Consent DA 309-11-2001-1 were reviewed as part of the compliance audit and 16 conditions out of a total of 247 conditions (excluding sub-conditions) were not complied with. Three of these non-compliant conditions are now in

compliance (Conditions 3.31, 6.12(b) and 6.31) and a further three will be in compliance shortly (Conditions 4.19, 4.20, 6.7).

Comparison of environmental monitoring results that were available from the beginning of January 2004 to June 2004, with the predictions of the EIS indicated that the mine and infrastructure areas are being conducted generally in accordance with the details and predictions outlined in the EIS. One exception is the blasting exceedance that occurred on the 6th May 2004. The EIS predicted that overpressure and vibration measurements will meet the ANZECC blasting guidelines at all monitoring locations for all years of mining. The blast on the 6th May 2004 exceeded the 120dB(L) overpressure criteria at Camberwell Village and at St Clements Church. An investigation into the cause of the exceedance was performed which identified numerous failures in the field control of drill and blast practices. These have since been rectified. ACOL received a PIN and a fine of $1500 from the DEC for the exceedance.

For the period February to July 2004, levels for overpressure and vibration have exceeded the DEC permitted percentage exceedance criteria. These results are only for 6 months, compared with the 12 months period for which these are applicable. Blasting represents 18% of the total complaints that have been received from January to August 2004. Blasting is an issue that requires on-going management. There have been seven incidents where blasts have exceeded the 115dB(L) overpressure limit within Camberwell Village. Ashton will need to focus on the adoption of management practices to further reduce the number of blasting exceedances over the next six months to ensure that the exceedance criteria nominated within the development consent is complied with.

The mine received a Penalty Infringement Notice from the EPA for an incident on 1 April 2004 for failing to provide adequate dust suppression on a scraper haul road. Adverse weather conditions were occurring on the day and operations had been modified in an attempt to minimise dust generation.

During the audit, it was identified that existing storage conditions of fuels and oils were inadequate on site. Many fuels and oils were not being stored appropriately on bunded pallets or within a bunded area. It was observed at the maintenance area that empty and full drums were being stored together in the same area. Systems for storing chemicals, hydrocarbons and the servicing of equipment should have been constructed prior to use.

A bunded compound is currently being constructed and should be complete by mid-September. Since the audit, Ashton have concentrated their efforts to improve the interim storage conditions of fuels and oils on site. Temporary oil storage conditions have been rectified with drums now being stored on spill-gard bunded pallets. Fuel storage is now within a self-bunded tank.

HWE has implemented a comprehensive environmental induction package including a competency assessment. This package appears to highlight many of the environmental responsibilities required by employees and contractors relating to development consent conditions. The pocket card reporting of environmental hazards/near misses demonstrates an effective system for environmental management.

1. INTRODUCTION

1.1 BACKGROUND

The Ashton Coal Project is located approximately 14km north west of Singleton and in close proximity to the village of Camberwell. The project consists of an open cut and underground Coal Mine and associated coal preparation plant, coal stockpiling, rail loading facilities, administration building, stores, bathhouse facilities and car parking. It is noted that it is not intended to commence development of the underground mine until late 2004.

Development Consent (DA 309-11-2001-1) for the project was granted on 11 October 2002 and Mining Lease No 1533 was granted on 26 February 2003. DIPNR advised verbally that with respect to Condition 8.8(b)(i), the audit should focus on assessing compliance with the conditions of the Development Consent and not those of the Licence and other approvals.

The project is owned and operated by Ashton Coal Operations Pty Ltd (ACOL). White Mining Limited and Itochu Coal Resources are the shareholders in ACOL.

The project comprises an opencut and underground coal mine and will produce approximately 4.2 to 4.4mtpa of product coal at its peak production. The project is expected to provide employment for 140 personnel during mining operations.

The open cut operation comprises a pit and an out of pit emplacement on the northern side of the highway. Open cut mining commenced in January 2004, with the establishment of the Eastern Bund a main priority.

The multi-seam underground longwall mine will be located to the south of the New England Highway and accessed from the highwall of the opencut. Commencement of underground mining operations is scheduled for 2005.

Ashton has established a Life-of-Mine contract with Henry Walker Eltin (HWE) to mine the opencut. Australian Coal Processing, a joint venture between Roberts & Schaffer and White Mining are the appointed contractors for operation of the CHPP. An interim Mining Operations Plan (MOP) was approved by the Department of Mineral Resources (DMR) for the period ending August 2004. The final version of the MOP addressing the life of the mine was submitted to the DMR on 28th July 2004 for review.

1.2 AUDIT PROTOCOL AND CRITERIA

Condition 8.8 of the Development Consent (DA 309-11-2001-1) dated 11th October 2002 requires that:

"(a) *one year after commencement of construction and every three years thereafter until five years after completion of mining in the DA area, or as otherwise directed by the Director-General, the Applicant shall conduct an environmental audit of the mining and infrastructure areas of the development in accordance with ISO 14010 - Guidelines and General Principles for Environmental Auditing, and ISO 14011 - Procedures for Environmental Auditing (or the current versions), and in accordance with any specifications required by the Director-General. Copies of the report shall be submitted by the Applicant to the Director-General, SSC, EPA, DLWC, DMR, NPWS RTA, NSW Fisheries, MSB, NSW Agriculture and the CCC within two weeks of the report's completion for comment.*

(b) The audit shall:

i. assess compliance with the requirements of this consent, licences and approvals;
ii. assess the development against the predictions made in the EIS and the predictions and commitments made in documents listed in condition 1.2
iii. assess the development against predictions made in SMIARs required under conditions 3.24 – 3.28; (Not yet required)
iv. review the effectiveness of the environmental management of the operation, including any mitigation works;
v. be carried out at the Applicant's expense; and
vi. be conducted by a duly qualified independent person or team approved by the Director-General in consultation with SSC and other relevant agencies."

The Statutory Environmental Audit of the Ashton Coal Mine for the period September 2003 to September 2004 (being one year after the commencement of construction), was conducted by Pacrim Environmental Pty Ltd. with inspections on the 9th and 10th August 2004 and subsequent report preparation.

The Audit Team comprised:

Wayne Perry *Lead Environmental Auditor* – Pacrim Environmental (QSA Lead Environmental Auditor N° 9456)

Tracey Moylan *Senior Environmental Engineer* – Pacrim Environmental

The Site's representatives were Peter Barton, Technical Manager (Ashton Coal) and Colin Davies, Environmental Officer (Ashton Coal).

The audit process was consistent with the requirements of the ISO14010 'Guideline and General Principles for Environmental Auditing' and ISO14011 'Procedures for Environmental Auditing', and consisted of:

- pre-audit review of documentation and preparation of audit schedules;
- site inspection of the project area;
- interviews with project personnel;
- review of relevant documents, including those listed in **Appendix 1** to assess compliance, impact assessment and environmental management; and
- preparation of this audit report.

The geographical extent of the audit was the Consent Area, which comprises the open cut coal mine and associated surface facilities. Compliance was audited against the following planning instruments:-

- Development Consent – DA 309-11-2001-1 dated 11 October 2002

Ashton Coal, in correspondence to DIPNR, nominated Pacrim Environmental Pty Ltd. as an independent organisation audit for the purpose of satisfying Condition 8.8 of the Development Consent. Correspondence from DIPNR confirming Pacrim Environmental Pty Ltd as an approved independent auditor and confirming the scope of the audit was received on 5 August 2004 (refer to **Appendix 3**).

It should be noted that in correspondence from DIPNR, it was stated that "the Department does not recognise the term 'partial compliance' – the company is either in compliance with

the conditions of consent or not". In previous audits the term 'partial compliance' was used to denote the situation where the intent of the condition had been satisfied, eg, a Dust Management Plan had been prepared but had not been submitted to the relevant agencies within the time specified. For this audit, this would now be denoted as a non-compliance.

DIPNR advised verbally that with respect to Condition 8.8(b) (i) the audit should focus on assessing compliance with the conditions of the Development Consent and not those of the Licence and other approvals.

Separate discussions with community members, government agencies and Singleton Shire Council were not undertaken during the course of the audit.

1.3 PERSONNEL INTERVIEWED

The following site personnel were interviewed during the audit:

- Peter Barton - Technical Manager, Ashton Coal
- Colin Davies - Environmental Officer, Ashton Coal
- Rod Dixon - Maintenance Manager, HWE
- Brad Watson - CHPP Contractor (Integrated Risk Management)
- Jeff Hanlon - Senior Drill and Blast Engineer, HWE
- Dave Topliss - Mining Superintendent, HWE
- Jim Cooper - Safety, Health & Environment Superintendent, HWE
- John Janetzki - Mine Manager, HWE

1.4 SITE INSPECTION

During the course of the audit, the following aspects and locations of the mine and facilities were observed:

- water carts performing dust suppression on haul roads and exposed areas;
- coal dumping at ROM stockpile and Front End Loader dumping into ROM Hopper;
- blasting and dust dispersion;
- water management structures, including catch drains, culverts, channels and dams associated with the facilities;
- visual and noise barriers (including eastern emplacement area);
- monitoring equipment at Environmental Monitoring Station 1 - Camberwell Village (blast monitor, noise and dust deposition monitors, TEOM)
- waste and chemical storage areas;
- spill response capabilities;
- Workshop and Stores;
- Coal Handling and Preparation Plant;
- visibility from public roads and the village of Camberwell;
- perimeter tree planting; and
- on-site sewerage system.

2. ASSESSMENT OF COMPLIANCE WITH THE REQUIREMENTS OF THE CONSENT

2.1 DEPARTMENT OF INFRASTRUCTURE, PLANNING AND NATURAL RESOURCES – DEVELOPMENT CONSENT

The conditions of Development Consent DA 309-11-2001-1 were reviewed as part of the compliance audit and 16 conditions out of a total of 247 conditions (excluding sub-conditions) were not complied with. These non-compliant conditions are summarised in **Table 2.1**. Completed tables summarising the compliance status of each condition are included in **Appendix 2**. Three of these non-compliant conditions are now in compliance (Conditions 3.31 6.12(b) and 6.31) and a further three will be in compliance shortly (Conditions 4.19, 4.20, 6.7).

Table 2.1: Non Compliant Conditions of Development Consent (DA 309-11-2001-1)

No.	Condition	Status	Comment
3.32	Within six months of the commencement of mining operations, the Applicant shall make a contribution of $50,000 towards a trust fund set up by the Department and the Public Trustee for the purposes of a regional study into Aboriginal cultural heritage as defined by the Trust Deed.	No *(Now in compliance)*	Mining commenced on the 19th January 2004, and contribution had not been made by 9/8/04. *It is noted that payment was forwarded on 23.8.04.*
3.45b	Flora and Fauna. - repairing erosion problems.	No	Rilling is evident along the outer bank of the mine haul road. This sloping area needs to be ripped along the contour and re-seeded as run-off from these areas would discharge into Betty's Creek if the small sedimentation dams overtop. Condition 3.50(d) is also affected by this erosion. *ACTION: It is proposed to repair and revegetate these areas as soon as there is adequate soil moisture.*
3.49 (c)	if inflow is likely to contain oil or other deleterious floating matter a baffle must be installed at the outlet to prevent discharge of that matter; and,	No	No baffle exists on process water dam or run-off water dam. Other controls such as hay bales, etc are employed within the drains on site. There is no control in place to isolate contaminated waters from workshop hardstand areas. A baffle is not installed on the sedimentation dam at the eastern end of operations as this dam is used to capture run-off from main overburden emplacement only. Site water is contained within the site and re-used.
4.7c	the quality of water in the stream or watercourse below its ANZECC beneficial water use classification prior to the commencement of mining operations;	No	Small sedimentation ponds along toe of outer bank of mine haul road appear to be high in Total Suspended Solids (TSS) and would overflow into Betty's Creek. This will cause a likely impact on the water quality in Betty's Creek. *ACTION: It is proposed to repair and revegetate these areas as soon as there is adequate soil moisture.*

No.	Condition	Status	Comment
4.12	The Applicant shall recalculate the mine water balance on a six-monthly basis to assess:	No	The site water balance has been calculated but has not been recalculated at 6 monthly intervals. *ACTION: It is proposed to recalculate this and report it in the AEMR.* *This item will be entered in a schedule to ensure that it is updated at the required frequency.*
4.19	Bund(s) must be installed around areas in which fuels, oils and chemicals are stored. Bunds must: a) have walls and floors constructed of impervious materials; b) be of sufficient capacity to contain 110% of the volume of the tank (or 110% volume of the largest tank where a group of tanks are installed); c) have walls not less than 250mm high; d) have floors graded to a collection sump; and e) not have a drain valve incorporated in the bund structure.	No	Systems for storage of chemicals and hydrocarbons have not been constructed prior to use. Storage of chemicals and hydrocarbons at CHPP and workshop areas is not in compliance, with chemicals not being stored within bunded areas or on spill-gard bunds. New and used batteries were also not within a bunded area or on spill-gard bunds. *ACTION: It is noted that the construction of a bunded area for the storage of hydrocarbons at the workshop area has been started. This is due for completion by mid-September. The proposed area will be sufficient to contain 110% and is constructed of impervious material.* *Storage of oils and fuels on site has been improved with oil drums being stored on spill-gard bunded pallets and fuels stored in a self bunded tank. New and used batteries are also being stored in a bunded pallet.*
4.20	[19]A wastewater treatment facility with oil separator and sediment trap must be installed to treat drainage from the hardstand, vehicle servicing and general workshop areas.	No	Interim use of workshops at CHPP and HWE, prior to permanent workshop establishment is non- compliant. No oil/water separator. *ACTION: An oil/water separator has been installed at the Maintenance Workshop and is operational. The oil/water separator to be located at the CHPP is due for completion by the end of October.*
5.3 (a) & (b)	One month prior to the commencement of construction works, the Applicant shall prepare and implement a Waste Management Plan (WMP) for the DA area in consultation with SSC and EPA and to the satisfaction of the Director-General. The Plan shall include, but not be limited to:	No	While a Waste Management Plan has been prepared and approved, it has not been fully implemented. Waste tracking system is not in full compliance. Confirmation had not been received acknowledging that used batteries, waste oil and grease had been received at the waste facility. No recycling facilities on site, except for scrap steel. All waste is put into a bulk bin.

No.	Condition	Status	Comment
6.3	Activities occurring at the premises must be carried out in a manner that will minimise emissions of dust from the premises.	No	Large bare areas are apparent at the CHPP. These areas are subject to dust emissions during windy periods. No procedure is in place at the CHPP detailing if operations should be suspended or modified if excessive dust is being generated. Double handling of raw coal is practiced at the ROM dump hopper where typically trucks dump onto open stockpile areas instead of directly into the hopper. Front end loaders are used to move the coal into the hopper. Both these operations were observed to be causing the generation of dust during the hours when the opencut was operating. It is acknowledged that it is necessary to load from the stockpile during the hours 10pm to 7am when the opencut is not operating. The level of dust emissions would be lessened with the installation of perimeter sprays.
6.7	An effective water spray system must be installed at open coal stockpiles and operated at sufficient frequency to maintain the entire surface of the stockpile and related coal handling areas in a condition that will minimise the emission of wind blown or traffic generated dust.	No	While washed coal stockpiles have a water spray system, there is no spray system on the ROM stockpile. Dust suppression is via spray cannons and sprays on water tankers. *It is noted that a water spray system is being installed on the ROM stockpile at the CHPP.*
6.12(a)	establish real-time ambient monitoring stations to provide continuous measurements of PM10 concentrations at the closest residences for which no agreements have been negotiated.	No	Real time monitoring stations were established at the nearest non-owned residences in consultation with EPA. Subsequently one of these properties has since been purchased by Ashton Coal and is therefore no longer the closest non-owned residence. The closest non-owned residence is some 200 metres further away from the sampling location. However, the results obtained from this monitoring location represent a more stringent scenario than if the monitoring site was located 200m further away. This situation is also applicable to Condition 6.28(a). *ACTION: It is recommended that Ashton Coal consults with the EPA to have the current situation ratified.*
6.12(b)	provide quarterly reporting during operation and rehabilitation of the open cut mine on the performance of the control measures and results of the ambient air quality monitoring system, unless otherwise agreed by the Director-General. The reports shall be provided to the Director-General, CCC and SSC within seven days of completion of the report; and	No *(Now in Compliance)*	Reports on the performance of the control measures and results of the air quality monitoring system were not sighted during the audit. *(The air quality monitoring system was installed in late December and while the system was collecting the appropriate data there were some difficulties involved with the transfer of data into the analysis software. This issue has been resolved and the 1st and 2nd quarter reports for 2004 have been prepared and were sent to DIPNR. on the 18th of August and the 27th of September)*

No.	Condition	Status	Comment
6.22	[34]The Airblast overpressure level from blasting operations carried out in or on the premises must not exceed: (i) Exceed 115dB (Linear Peak) for more than 5% of the total number of blasts over a period of 12 months; and (ii) Exceed 120dB (Linear Peak) at any time, At any residence or other noise sensitive receiver such as the St Clements Anglican Church and Camberwell Community Hall.	No	A blast on the 6th May recorded overpressures of 124.4dB(L) in Camberwell Village and 122.1dB(L) at St Clements Church. The EPA was notified in relation to the exceedance and an investigation into the event was performed. Ashton Coal subsequently received a Penalty Infringement Notice from the EPA. The primary cause of the exceedance was a clockwise rotation drill pattern from the original design. This resulted in holes being drilled into loose material that had been dozed up to buffer the shot. The consequential lack of confinement led to a blow out in the exposed face and resulted in a single peak in the level of air overpressure recorded at both the village monitor and the church monitor. The investigation identified failures in the field control of drill and blast practices, which have since been rectified. Since commencement of blasting in February 2004 up until 6th August 2004, overpressure exceedance above 115dB is 6.7% but over the full 12 months period, it is expected to be less than 5%. *ACTION: Improvement in blasting management practices aim to reduce this figure over the next 6 months.*
6.31	The Applicant shall arrange at its own costs, for the inspection by a technically qualified person agreed to by the Director-General, to record the material condition of the St Clements Anglican Church and Camberwell Community Hall prior to the commencement of blasting. The Applicant shall supply a copy of any inspection report, certified by the person who undertook the inspection, to the relevant property owner and the Director-General within fourteen (14) days of receipt of the report.	No *(Now in compliance)*	The reports were sent to the manager and owner of both St Clements Church and Camberwell Community Hall on the 5th January 2004 but not to DIPNR. *Copies of the reports were sent to DIPNR on 26 August 2004.*
6.55	The Applicant shall design and construct all roads and areas where mobile equipment and vehicles move on the site to minimise off-site lighting impacts from equipment lighting and headlights. Lighting from equipment and vehicles shall not shine directly on residences or vehicles moving along public roads at any time.	No	15 complaints YTD or 6% of total complaints were predominantly from opencut and dump lights shining into houses and Camberwell Village. Also one complaint on 7 July of CHPP lights directed towards NE Hwy. Site inspection confirmed glare from lights onto NE Highway and Glennies Creek Road. *ACTION: It is recommended that the fitting of side shields to the portable arc lights be investigated.*

No.	Condition	Status	Comment
10.3 (b)	Complaints Handling Procedures. ....for providing a report of complaints received with respect to the construction and operation of the mine, every six months throughout the life of the project to the Director-General, SSC, EPA, DMR, and the CCC, or as otherwise agreed by the Director-General. A summary of this report shall be included in the AEMR (conditions 9.2-9.4);	No	A six monthly report concerning complaints is not being prepared and forwarded to the agencies. *ACTION: This report will be prepared and forwarded to the relevant agencies.* *This item will be entered in a schedule to ensure that it is updated at the required frequency.*

3. ASSESSMENT OF CONFORMANCE OF THE DEVELOPMENT WITH THE EIS PREDICTIONS

The 'White Mining Limited Ashton Coal Project Environmental Impact Statement', November 2001 prepared by HLA-Envirosciences Pty Ltd. was reviewed to compare the predicted environmental performance with the actual environmental performance. The actual environmental performance was determined from the monitoring results reported in the AEMR for 2003 during the construction phase, from year to date data supplied for 2004, and by verification from field inspection.

3.1 GENERAL UNDERTAKINGS

The Ashton Coal Project will comprise of three operations including a small open cut mine, surface facilities and underground mine to the south of the New England Highway. The mine will produce approximately 4.2 to 4.4 million tonnes of product coal per annum at peak production.

3.2 AIR QUALITY

3.2.1 EIS Predictions

The EIS modelled the potential air quality impacts of Ashton mining operations using various scenarios summarised in **Table 3.1** for Year 4 of operations. Dust emissions are compared against the US EPA annual standard for Particulate Matter less than 10 microns (PM_{10}) of 50µg/m^3, US EPA 24-hour PM_{10} concentrations of 150µg/m^3, NHMRC annual guideline for Total Suspended Particulate (TSP) of 90 µg/m^3 and NSW EPA annual average dust deposition of 4g/m^2/month (maximum increase of 2g/m^2/month above pre-mining background levels).

Figures demonstrating the expected dispersion and dust fallout patterns due to Ashton with operational controls in place and other mines against relevant air quality goals during year 4 of operation were presented in the EIS for the predicted annual average PM_{10} concentrations, TSP concentrations and dust deposition levels.

Table 3.1 - EIS Air Quality Predictions

DUST EMISSION	YEAR 4 Ashton Coal Project in isolation with no operational controls
PM_{10}	With background dust level (20µg/m^3), at least 10 residences will exceed 50µg/m^3 annually and the majority of the northern residents of Camberwell will have levels equal to 50µg/m^3
TSP	Dust emission will be below 90µg/m^3 at all residents
Dust Deposition	Ashton Mine in isolation will increase dust deposition by less than 2g/m^2/month except for one resident
DUST EMISSION	YEAR 4 Ashton Coal Project with no operational controls and cumulative effects
PM_{10}	PM_{10} emissions will exceed 50µg/m^3 at all residences in the village of Camberwell
TSP	Three residents at Camberwell will have TSP concentrations equal to 90µg/m^3.
Dust Deposition	Eight residents (7 at Camberwell village) will have dust deposition levels above 4g/m^2/month.
DUST EMISSION	YEAR 4 Ashton Coal Project with operational controls and cumulative effects
PM_{10}	All residences at Camberwell will be below 50µg/m^3
TSP	All residences at Camberwell will be below 90µg/m^3
Dust	All residences at Camberwell will be below 4g/m^2/month

Deposition	
DUST EMISSION	Short Term Impacts Under Dry Windy Conditions
PM10	• Dust concentrations from Ashton Coal Project in isolation after cessation of mining on the windiest day would only increase by 2μg/m³ at Camberwell. • Dust concentrations from Ashton Coal Project in isolation with no attempt to reduce impacts on the windiest day would only increase by 7μg/m³ at the most affected Camberwell residence. • Dust concentrations from Ashton Coal Project in isolation with no attempt to reduce impacts in light 1m/s NW winds would increase by 650μg/m³ at the most affected residence (adjacent to the mine and since purchased by ACOL).

As stated in the EIS, predicted greenhouse emissions from the larger Mount Arthur North Mine EIS suggest that emissions from the Ashton Coal Project will not cause exceedances of CO, NO2 or SO2 criteria.

3.2.2 Actual Mine Performance

The monitoring results for January 2004 to August 2004 are summarised in the following tables;

Table 3.2 - PM_{10} Monitoring Results for 2004

PM_{10} (μg/m³) (TEOM)	Cumulative Results (Ashton and other sources)		Ashton Contribution	
Location	YTD Average (mid July 04)	Maximum 24hr period	YTD Average#	YTD Maximum*
1. J.Richards	26	59	1.7	41
2. Barton	25	59	1.7	34
3. B.Richards	27	62	3.6	33
4. East Rail	37	233		
6. Centre Rail	49	216		
7. West Rail	31	188		

 # = Ashton's contribution has been calculated by taking the value at community sites 1, 2 and 3 and subtracting the lowest value from the on site locations 4, 6 and 7. This is only applicable for winds in a predominately W to N wind quadrant as winds from other directions should not allow Ashton generated dust to impact on the three community monitoring sites.

** = The contribution is based on the level at sites 1,2 and 3 minus the background. For the maximum levels at sites 1 and 2 listed above, the background sites were not operational on that particular day and the result is total PM10 average.*

Table 3.3 - TSP Monitoring Results for 2004

TSP (μg/m³) (HVAS)	Cumulative Results (Ashton and other sources)	
Location	YTD Average (end of June 04)	Maximum 24hr period
Site 1	77	217
Site 2	77	213
Site 3	92	194
Site 6	111	374

Table 3.4 – Dust Deposition Monitoring Results for 2004

Dust Deposition (g/m^2/month) **Location**	**Average Background Levels measured from Jun01 – Sep01 prior to commencement of Ashton Operations**	**Cumulative Results (Ashton and other sources)** **YTD Average (end of June 04)** *excluding contaminated results*
Dust 2. Ravensworth D3 (D2)	3.5	2.9
Dust 3. Ravensworth D24 (D3)	3.9	3.6
Dust 4. Hunter River (D4)	1.6	3.1
Dust 5. New England Highway (D5)	2.0	2.7
Dust 6. St Clements Church (D6)	1.5	2.5
Dust 7. J.Richards (D7)	NA	3.0
Dust 8. Barton (D8)	NA	2.6
Dust 9. B.Richards (D9)	NA	3.5
Dust 10. East Rail (On-Site) (D10)	NA	2.7
Dust 11. Camberwell Coal D9 (D11)	NA	2.1
Dust 12. Centre Rail (On-Site) (D12)	NA	15.6
Dust 13. West Rail (On-Site) (D13)	NA	5.9

Where: NA = Not Available

3.2.3 Comparison of Actual and Predicted Performance

The actual mine performance in comparison with EIS predictions is summarised in **Table 3.5**.

Table 3.5 Air Quality – Predicted versus Actual

Ashton Coal Project with operational controls and cumulative effects		
YEAR	**EIS PREDICTION**	**MINE PERFORMANCE**
PM_{10}	All residences at Camberwell will be below 50µg/m^3	YTD data for 2004 indicates that the annual average PM_{10} is below 50 µg/m^3at all locations. and below the long term cumulative annual average goal of 30 µg/m^3. No exceedances of the short term cumulative 24 hour guideline of 150µg/m^3 have been experienced at Camberwell Village (Sites 1, 2 and 3). Levels at the other 3 sites (4, 6 and 7) are currently exceeding the annual average criteria but this is to be expected given the close proximity of these on-site monitors to operational activities. The Average annual PM_{10} during 2002/03 was 30 µg/m^3 .This is equivalent to the NSW EPA long term cumulative goal of 30µg/m^3.
TSP	All residences at Camberwell will be below 90µg/m^3	YTD Average annual TSP for Site 1 and Site 2 (Camberwell Village) were 77 µg/m^3 for 2004, which is below the 90 µg/m^3 as predicted for this area. Site 3 is slightly above the 90 µg/m^3 as predicted in the EIS. This site is located south east of current mining activities and north west of active agricultural and other mining activities. While air quality impacts are evident from Ashton Coal, impacts are also occurring

		from other mining and agricultural activities. The criteria is based over one full year and the monitoring year is not yet complete. The monitoring station at Site 1 is installed in an area where bike riding on dirt may be contributing to higher dust results being measured. Site 6 results of 111 $\mu g/m^3$ were influenced by rail activities and mining. Results for the village of Camberwell were below the US – EPA short term good air quality goal of $260\mu g/m^3$. Average annual TSP measured at St Clements Church, Camberwell during the 2002/03 AEMR reporting period was $62\mu g/m^3$.
Dust Deposition	All residences at Camberwell will be below $4g/m^2$/month	The YTD average annual dust gauge results did not exceed annual average DEC guidelines of $4g/m^2$/month at any external locations. Located adjacent to Ashton mining activities within the coal lease area are dust deposition gauges D12 and D13 measuring YTD annual averages of $15.6g/m^2$/month and $5.96g/m^2$/month respectively. Ashton Mining activity influenced this result due to the close proximity of the gauge to the mine. A haul road was constructed within 5 metres of site D12 and the main overburden emplacement was within 50m of site D13. No exceedances were reported during the 2002/03 AEMR reporting period for construction activities.

The annual average dust deposition data was plotted as a series of isopleths in the EIS for year 4 of operations. The predicted dust deposition isopleths were cumulative values representing Ashton operations with operational controls and emissions from nearby mines. Background levels in Camberwell Village as sampled during 2001, prior to Ashton construction activities were found to average $1.5g/m^2$/mth. The predicted dust deposition levels plotted for Camberwell Village in the EIS were $2g/m^2$/mth. The year to date results which average $3g/m^2$/mth at the Camberwell Village monitoring sites are in accordance with the EIS predictions and below the NSW EPA guidelines which state a maximum increase level of $2g/m^2$/mth above pre mining levels.

Ashton received a Penalty Infringement Notice for an incident on 1 April 2004 when excessive dust levels from scraper activity on a haul road were observed by an EPA Officer. Adverse weather conditions were persisting at the time and operations had been modified attempting to minimise dust generation. Later analysis revealed that no monitoring site during that period exceeded DEC guidelines.

The EPA contacted Ashton on 14 June 2004 to advise that they had received two complaints about dust in the village of Camberwell. Operations had been modified in accordance with the Air Quality Management Plan. By 10.30am on 14 June 2004 all operations had ceased. Levels of PM_{10} were checked and found to be within criteria defined within the Development Consent. Conditions were extremely dry during this period with the entire Hunter Valley area experiencing drought conditions.

3.3 NOISE IMPACTS

3.3.1 EIS Prediction

The EIS outlined the number of residences anticipated to exceed the intrusiveness criteria for various operational scenarios from daytime, evening and night time noise levels, and is summarised in **Table 3.6**.

Table 3.6: EIS predicted noise levels from Ashton Coal Project under certain environmental conditions.

OPERATIONAL SENARIO	N° OF RESIDENCES EXCEEDED DURING		
	Neutral	Inversion	Windy
Day and Evening Time			
CPP, Train Loading, Barrett Pit, Dumping on East Dump at RL 110	0	1	5
CPP, Train Loading, Barrett Pit, Dumping on East Dump at RL 125	0	4	10
CPP, Train Loading, Barrett Pit, Dumping on West Dump at RL 90	0	0	5
CPP, Train Loading, Barrett Pit, Dumping on West Dump at RL 105	0	3	7
Night Time			
CPP, Train Loading, Barrett Pit, Conveyor Drive and Vent Fan	0	0	0
Train Loading	0	0	0
Reverse Beepers	0	1	3

Predicted operational noise level isopleths were presented in the EIS for operational noise levels during construction, when dumping at RL110 on the eastern emplacement and when dumping at RL125 on the eastern emplacement.

3.3.2 Actual Mine Performance

Quarterly monitoring for the period October 2003 to July 2004 resulted in no exceedances in Development Consent or EPL limits for noise during the period.

Attended noise monitoring surveys for 2003 and 2004 demonstrated that Ashton is in compliance with relevant noise criterion applicable during survey times at daytime, evening and night time periods. It was found that some night time noise monitoring results exceeded amenity criteria levels for a particular location, however the noise influences were from a variety of sources such as noise from traffic on the New England Highway, natural sources including insects and frogs, and mine noise other than from Ashton Mine.

Recent noise tests performed in March 2004 confirmed that the combined sound power level of all plant operating at the dump area does not exceed the maximum allowable level of 114dB(A), L_{eq}(15-min).

3.3.3 Comparison of Actual and Predicted Performance

Noise results examined for the audit period confirmed that Ashton's noise contribution was within the levels predicted in the EIS for the monitoring sites within the residential areas of Camberwell Village.

3.4 WATER QUALITY

3.4.1 EIS Predictions

The EIS stated that groundwater salinities were expected to range between 5,000 and 16,000µS/cm. Shallow alluvial aquifers in Bowmans Creek range between 900 and 2000µS/cm producing a sustainable yield up to 0.1ML/day. Dewatering of the hardrock aquifers is expected to induce leakage from the alluvial aquifers and intercept groundwater in mine workings and is summarised in **Table 3.7**.

Table 3.7 – EIS Predicted alluvium and groundwater seepage into Ashton Coal Project.

Year	Predicted Alluvium Seepage Rates (ML/Day)			Predicted Groundwater Seepage (ML/Day)	
	Hunter River	Bowmans Creek	Glennies Creek	Open Cut	Underground
2	-0.004	-0.008	0.065	0.367	0
5	0.161	0.180	0.319	0.214	0.914
12	0.303	0.397	0.563	0.214	1.726

The project has been designed on a nil discharge basis, however water from sedimentation dams may be released under exceptional circumstances and licensed under the Hunter River Salinity Trading Scheme. However, subsequent to the EIS preparation, discussions held with the EPA indicated licensing would not be necessary. The EIS predicted that in median and dry (10 percentile rainfall) years that an average of 303ML/year of water will be imported during open cut operations. The maximum amount of water predicted to be imported would be 470ML/year at peak coal production (Years 5-6) assuming extremely dry conditions. Less than 50ML/year surplus of water would result in a simulated wet year (90 percentile rainfall) during Years 1 to 7. Beyond Year 8, Ashton would have the capacity to store surplus rainfall from extreme wet years in the open cut final void. Water quality in the Ashton water management system is predicted to range from 4,000 to 7,000µS/cm. If the final void is left as a closed catchment, water quality is anticipated to range between 5,000 and 7,000µS/cm.

Interaction of the Opencut with Glennies Creek

There is natural seepage passing from the coal measures to Glennies Creek. During open cut operations this is likely to be reversed when the floor of the mine is lower than the creek. Following completion of mining the groundwater seepage is expected to go back to natural condition with similar levels of flow back to Glennies Creek. The water quality is expected to be the same as the existing flows from the coal measures.

3.4.2 Actual Mine Performance

During 2002/03, Ashton undertook background monitoring at Bowmans Creek, Glennies Creek and the Hunter River. For the three sites, pH was found to range between 7.1 and 8.3. Little variation in pH occurred at the sites. Glennies Creek varied over the maximum range of one pH unit (7.1 to 8.1). This variation was likely to be resulting from natural fluctuations as a result of rainfall/runoff, vegetation decay and fluvial sediment movements. Electrical conductivities at all sites were low (*ie.* under 2500µS/cm) and remained constant throughout the year. Total Suspended Solids were generally low at all sites, except for isolated instances where higher results would occur due to periods of high intensity rainfall resulting in sediment transport from upper catchment areas.

Ashton also conducted background groundwater monitoring of 18 groundwater bores during 2002/03. Of these, five were tested for water quality and water levels monthly, and the remaining bores tested for water level only. Groundwater pH values were between 6.8 and 8.2. Groundwater electrical conductivities were under 2000µS/cm at four of the locations. At location RSGM1, groundwater electrical conductivities ranged between 5830 and 10,800µS/cm.

For 2004, surface water electrical conductivities ranged from 279µS/cm to 2,730µS/cm. Analysed pH reflects the alkaline hydrogeology environment of the Upper Hunter with values between 7.3 and 8.5. Groundwater electrical conductivities were still under 2000µS/cm at the previous three locations tested. At location RSGM1, groundwater electrical conductivities ranged between 9 960 and 10,400µS/cm.

There have been no in-pit groundwater inflows since commencement of open cut operations in January 2004. Total external water supply for the period ending June 2004 was 126.2ML.

3.4.3 Comparison of Actual and Predicted Performance

The actual environmental impacts of water management at Ashton are within the levels predicted in the EIS.

3.5 VISUAL IMPACTS

3.5.1 EIS Predictions

Surface infrastructure will have the greatest visual impact upon motorists upon the New England Highway southbound from Bowmans Creek to the ridge before the Camberwell. It is predicted in the EIS that the infrastructure will be visible from this 1.5km stretch of road for 50 seconds.

The eastern emplacement will be constructed as a visual screen and will be completed to 125m AHD level by Year 3. Residents from Camberwell and New England Highway motorists will have northerly views towards the emplacement bund but existing vegetation along Glennies Creek Road will lessen the views and it is anticipated that the distant Bayswater Power Station will distract motorists' views. There are two privately owned and a number of neighbouring mine owned residences with potential direct views of the emplacement for 2km NE along Glennies Creek Road from the railway crossing.

Open cut operations will predominately take place during daylight hours. Operations are likely to extend to 10pm, which during winter, means that lighting will be required for periods of up to 5 hours. Truck movements at night, with associated headlights, can cause impacts, as the lights may be flashing or moving. It is important that headlights are not directed towards motorists using the New England Highway or Glennies Creek road. There is little likelihood of truck headlights being aimed directly at vehicles using the Highway at night. On site road haulage impacts as seen along Glennies Creek road will be screened by the environmental bund constructed along the road.

3.5.2 Actual Mine Performance

Excavated overburden is currently being placed out of pit on the eastern emplacement as approved in the Development Consent. The final level of the eastern emplacement has been limited to RL125 to ensure that all operations are confined behind the Glennies Creek Road environmental screen. An application has been submitted to the DIPNR to raise the height of

this bund to RL135, thereby avoiding the need to construct the proposed western emplacement. Part of the eastern environmental bund (up to RL110m) has been rehabilitated, which involved reshaping the overburden, rock raking, topsoiling and seeding with winter pasture species. Views of mining operations from along Glennies Creek Road have been concealed by this bund.

An environmental bund has also been constructed along the New England Highway. This bund has been rehabilitated with winter pasture species and hybrid eucalypt trees have been planted to screen views to the infrastructure area from along the Highway. Views of the CHPP from both north and south bound traffic on the highway are evident, however the CHPP infrastructure has been coloured a muted green to blend in with the surrounding pastoral landscape.

Low-pressure sodium lights have been used in the CHPP and workshop maintenance areas to reduce glare for passing motorists. Some white lights have been used during night-time operations specifically for safety reasons. Lighting controls implemented at Ashton involve directing lighting to active areas, dumping on less exposed areas, minimising the number of lights and placement of earthen screens. Ashton has received 15 complaints YTD related to lighting effects. This constitutes 6% of total complaints. These complaints have been predominantly from opencut and dump lights shining into houses and Camberwell Village. There was also one complaint on 7 July of CHPP lights directed towards the New England Highway.

During the audit period around 6pm, white lights were observed on the dump area shining in the direction of Glennies Creek Road. There were also two white lights that were apparent and shining towards the New England Highway affecting northbound motorists. These lights were not visible from the southern direction.

3.5.3 Comparison of Actual and Predicted Performance

The actual visual impact is generally as predicted in the EIS with some areas not satisfying the relevant Development Consent condition.

3.6 BLAST IMPACTS

3.6.1 EIS Predictions

Adopting the blast design restrictions outlined in Table 24 and 25 of the Ashton Coal Project EIS, it is predicted that overpressure and vibration measurements will meet the ANZECC blasting guidelines at all monitoring locations for all years of mining. The designed maximum instantaneous charge (MIC) weights will achieve vibration levels no greater than 2mm/s at the nearest residence and not exceed 18mm/s at sensitive points along the rail line.

3.6.2 Actual Mine Performance

Blasting commenced on the 4th February 2004. Between the 4th of February and the 6th August 2004, Ashton blasted on 150 occasions. There was one blast that occurred on the 6th May 2004 which exceeded 120dB(L) overpressure at Camberwell Village and St Clements Church. Results at Monitor 1, located in Camberwell Village, recorded an overpressure of 124.4dB(L) and the results for Monitor 2 at St Clements Church recorded 122.1dB(L) overpressure. The DEC was notified and an investigation was performed. ACOL received a PIN and a fine of $1500.

The primary cause of the exceedance was a clockwise rotation of the drill pattern from the original design. This resulted in holes being drilled into loose material that had been dozed up to buffer the shot. The consequential lack of confinement led to a blow out in the exposed face and resulted in a single peak in the level of air overpressure recorded at both the village monitor and the church monitor.

The investigation also identified numerous failures in the field control of drill and blast practices which have since been rectified.

Year to date blasting data for January to August 2004 are summarised for each monitoring location in **Table 3.8**.

Table 3.8: Summary of YTD Blasting Results at each monitoring location.

Monitoring Location	Overpressure dB(L)	Vibration (mm/s)
1. St Clements Church	3.3% of blasts have exceeded 115dB(L), which is below the 5% limit as required in the development consent.	2.7% of blasts have resulted in a vibration level greater than 2mm/s. This is below the 5% limit as required in the development consent.
2. Camberwell Village	6.7% of blasts have exceeded 115dB(L), which is above the 5% limit as required in the development consent. Blasting management practices aim to reduce this figure over the next 6 months.	20% of blasts have resulted in a vibration level greater than 2mm/s. This is above the 5% limit as required in the development consent. Blasting management practices aim to reduce this figure over the next 6 months.
3. Railway	There have been no exceedances. All results are within statutory and ANZECC limits for overpressure.	There have been no exceedances. All results are within statutory and ANZECC limits for overpressure.

3.6.3 Comparison of Actual and Predicted Performance

For the period February to July 2004, levels for overpressure and vibration have exceeded the DEC permitted percentage exceedance criteria. However, this is only for 6 months, compared with the 12 months period for which these are applicable. Other than the one blast exceedance, Ashton is expected to operate as predicted in the EIS, provided that adoption of management practices can further reduce the number of exceedances over the next six months. Future blast designs will be reviewed to prevent recurrence of any statutory and ANZECC guideline blasting exceedances.

4. REVIEW OF THE EFFECTIVENESS OF ENVIRONMENTAL MANAGEMENT AND MITIGATION WORKS

4.1 ENVIRONMENTAL MANAGEMENT SYSTEM

Ashton Coal Operations Ltd (ACOL) was approved by Development Consent DA 309-11-2001-1 on 11th October 2002. Henry Walker Eltin (HWE) has been appointed to manage the open cut mine operations for the life of the project. HWE has an Environmental Management System (EMS) conforming to the IS014001 Standard. The System incorporates a comprehensive range of environmental standards and procedures, against which internal audits are conducted.

4.2 Environmental Performance and Mitigation Works

The site has prepared an Environmental Management Strategy and specific Environmental Management Plans (EMPs) for the main environmental aspects of the mine. EMPs include control measures to address environmental risks. These Plans are supported by specific Standards and Procedures contained in the EMS.

During the course of the audit inspections, it was observed that in most instances, appropriate control measures were in place and were being maintained.

4.2.1 Dust

During the audit, the following components were identified as either demonstrating good practice or as requiring further improvement as identified in **Table 4.1**.

Table 4.1 Air Quality Management

Examples of Good Practice at Mine and CHPP	Areas requiring further improvement
• Topsoil stripping occurs to a maximum of 100m beyond working area so as to minimise disturbed areas	• Raw coal feed stockpiles do not have a water spray system. Stockpiles are currently being watered down with spray cannons on water tankers. It is noted that a water spray system is being installed. • Washed coal stockpiles have a water spray system, however this is manually operated from a control room. It is recommended to incorporate a telemetry system to enable the sprays on both the washed coal and raw coal stockpiles to be linked to wind speeds that are activated at wind speeds >6m/s.
• All roads and trafficable areas are watered using water carts, and haul roads are clearly defined with marker posts to control their location	• There was no procedure in place at CHPP for determining if loading from the raw coal pad should cease during windy conditions if dust emissions are excessive.
• Overburden placement areas are modified depending upon weather conditions to minimise dust potential	• Large areas of bare dirt at CHPP were generating dust as a result of strong wind gusts at the time of the inspection, in between watering by the water tanker. Areas not required for storage and access should be revegetated with a combination of grass, shrubs and trees. There was no real definition of roads within this area.

• Blasting operations can only commence after consultation with the Environmental Officer to ensure that wind speed and direction will not result in excessive dust emissions.	• Blasting does not occur if wind speeds are >10m/s. This is considered to be too high a limit and a figure of 6m/s would be more acceptable.
• ROM bins have water sprays, hanging conveyor belts and are enclosed on three sides and roofed to control dust emissions from unloading operations	• Double handling of raw coal is practiced at the ROM dump hopper where typically trucks dump onto open stockpile areas instead of directly into the hopper. Front end loaders are being used to move the coal into the hopper. This is because the ROM bins are not large enough to allow the dump trucks to dump directly into them. This double handling of coal increases the potential for the generation of dust. It is acknowledged that it is necessary to load from the stockpile during the hours 10pm to 7am when the opencut is not operating. The level of dust emissions would be lessened with the installation of perimeter sprays.
• Tapered Element Oscillating Microbalance (TEOM) monitors were installed at 6 sites in December 2003 for measuring PM_{10}. This is a real time system which enables PM_{10} measurements to be relayed back to ACOL office. The real time monitoring system is a very effective management tool. It enables ACOL to make modifications to operations immediately in the event that results are higher than expected.	
• Drill rig dust suppression systems are effective.	

Dust monitoring programs and reporting processes are in place.

Section 3 compares the actual dust levels with those predicted in the EIS.

4.2.2 Noise

Noise mitigation measures include:

- night time operations are modified to reduce noise emissions;
- reversing beepers have been replaced with a multi-spectrum (duck) type beeper to reduce noise levels;
- noise bunds have been constructed in sensitive areas (along Glennies Creek Road and the New England Highway);
- All HWE excavators and haul trucks are currently being fitted with noise-less radio signalling devices for loading to replace the existing excavator air horns. This will reduce intrusive noise levels;
- operator training and awareness; and
- modification of operations to suit adverse weather conditions and constraints, eg, day and night dumps are in use.

Noise monitoring programs and reporting processes are in place.

Section 3 compares the actual noise levels with those predicted in the EIS.

4.2.3 Blasting

Blasting is well managed with weather conditions being monitored and a Blasting Plan being required prior to blasting. All past blasts are recorded within a database to enable predictions to be made for future blasts. Blasts are monitored by HWE. Ashton has two portable monitors that are used in parallel with HWE monitors for verification of results.

During the audit, a blast was observed in the open cut mine. Wind speed during the blast was 7.2m/s. Dust resulting from the blast travelled out of pit but dispersed over ACOL property and was not in the direction of Camberwell Village.

Blasting results of overpressure and vibration are linked to the Environmental Officer's mobile phone. Results are received immediately after the blast occurs.

4.2.4 Water Management

Water management structures including catch drains, storage dams, sediment sumps, clean water diversions and culverts, were observed to be in place and well maintained. Erosion controls including hay bales, turf strips and sediment fences have been used in some areas to reduce impacts until vegetation is established. Water monitoring is undertaken both upstream and downstream of the site in Bowmans Creek to detect any adverse impacts.

Rilling as evidenced on the outer bank of the mine haul road is contributing sediment laden water to small sedimentation ponds along the toe of the outer bank. Overflow from these small dams would flow into Betty's Creek and may cause an impact on water quality.

Tailings are well managed on site. A series of four temporary dams are used to treat the tailings prior to disposal in overburden dumps. A biodegradable flocculant is added to the tailings to assist with dewatering. This system is proving to be very effective with settling performed in two weeks and excavation occurring by week 3. By using this system for tailings management, the area required has been significantly reduced.

Rock armouring has been completed along the western bank of Bowmans Creek.

Water for the site for the period ending June 2004 has been sourced from Glennies Creek (98ML) and The Hunter River (28.2ML)

4.2.5 Visual

Infrastructure is in a muted green colour scheme which blends with the surrounding environment very effectively.

Visual screens and bunds have been constructed in sensitive locations. These include the visual bund, located along Glennies Creek Road (shielding views from Camberwell Village) and the visual bund along the New England Highway (shielding views to the CHPP and the infrastructure area). Whilst the site is quite visible from the New England Highway, once tree planting on the visual bund matures, it will become less obvious.

4.2.6 Rehabilitation

Initial construction activities involved the construction of an environmental bund along Bowmans Creek. The bund was completed in 2003 and was rehabilitated with summer pasture species, shrubs and trees.

Rehabilitation of the bund along Glennies Creek Road has occurred with reshaping of the overburden, rock raking, topsoiling and seeding with winter pasture species. The bund along the New England Highway has also been seeded and planted with hybrid eucalypt species. Germination has been affected by the on-going drought conditions, and so an irrigation system was installed along the New England Highway bund to assist in vegetation establishment.

4.2.7 Waste

During the audit, the following components were identified as either demonstrating good practice or as requiring further improvement as identified in **Table 4.2**.

Table 4.2 Waste Management Practices

Examples of Good Practice at Mine and CHPP	Areas requiring further improvement
• Monthly reports are prepared to indicate the volume of materials removed from the site. This provides a system to track any abnormalities.	• New and used batteries at the Maintenance Area were not being stored appropriately on bunded pallets at the time of the inspection. *(Battery storage conditions have been rectified with new and used batteries now being stored in bunded trays)*
• Used small tyres are removed from site by a licenced contractor.	• It was observed at the maintenance area that empty and full drums are being stored together in the same area. Examples were sighted where full drums were not being stored on a bunded pallet or within a bunded area. A bunded compound is currently being constructed and should be complete by mid-September. Systems for storing chemicals should have been constructed prior to use.
• Pocket card book for reporting of Environmental Hazard/Near Miss is a good system.	• The waste management plan has not been fully implemented with no recycling activities occurring other than scrap steel.
• Random audits are performed to check that no materials are left on site by contractors.	• Waste Tracking system requires that the facility producing waste materials receives confirmation that the waste has been received at the waste disposal destination. Nationwide Oil has not provided confirmation that trackable wastes – grease, used batteries and oil have been received at the waste depot.
	• Waste oils on site are being stored in drums in a shipping container and not within a bunded area, until a decision is made on disposal.

4.2.8 Hazardous Materials and Hydrocarbons

A hazardous materials procedure is in place, which requires approval from the Environmental Officer before a chemical is introduced on site. It is proposed to develop a Chemical Register in the future.

At the CHPP workshop, 205L oil drums were being stacked two high on bunded pallets. There was no MSDS available for FL4440 Flocculant at the CHPP.

Interim storage areas for hydrocarbons are not in compliance with Development Consent conditions.

A number of oil spills on the workshop floor at HWE did not have oilsorb applied. Bins containing spill kits are not being labelled properly. In the Maintenance workshop a bin labelled as an oil spill kit was found to contain general rubbish, while a second bin containing the oil spill kit was not labelled at all.

Bulk storage of fuel on site is within a self bunded tank. Appropriate bunding should be considered for all chemicals on site. In the interim, hydrocarbons and hazardous chemical drums should be relocated to spill-gard bunded pallets.

Since the audit, Ashton has concentrated their efforts to improve the interim storage conditions of fuels and oils on site. Temporary oil storage conditions have been rectified with drums now being stored on spill gard bunded pallets. Fuel storage is now within a self-bunded tank. Spill kits have been identified and labelled appropriately.

4.2.9 Training

Regular training is performed through employee inductions, toolbox talks and EMS training. Comprehensive Environmental Induction of approximately 35 minutes is undertaken by HWE. A competency assessment is performed as part of this induction. This is an effective way of ensuring that contractors and employees are aware of their responsibilities.

4.3 Community Liaison & Complaints

The Mine participates effectively with the community through a range of activities and initiatives including the monthly newsletter. The relationship with the Community Consultative Committee is constructive.

A summary of complaints specific to Ashton is presented in **Table 4.3**.

Table 4.3: Community Complaints

Year / Complaint	2003	2004 YTD (10.8.04)	Percentage
Noise		93	36
Blasting		47	18
Lighting		15	6
Water		1	1
Dust		92	35
Operational Times		11	4
Total	**0**	**260**	**100**

It is noted that 196 or 75% of these complaints were from two complainants. All complaints were followed up in accordance with the complaint handling policy adopted by Ashton and are acknowledged within a 24 hour period.

5. CONCLUSION

5.1 Conclusions

The resources and assistance provided by Ashton to facilitate document retrieval for verification was appreciated by the auditors.

The mine is generally in compliance with the conditions of the Development Consent and operations have generally been conducted in accordance with the impact predictions contained within the EIS. Whilst there has been one occasion where blasting exceeded the 120dB(L) overpressure criteria at Camberwell Village and at St Clements Church, Ashton have responded by implementing a system using two portable monitors in parallel with HWE monitors for verification of results. The investigation performed in relation to the exceedance also identified numerous failures in the field control of drill and blast practices which have since been rectified.

Actions are being undertaken or planned to address the majority of the non-compliances identified.

5.2 Recommendations

The following recommendations are made as a result of this audit.

1. Hazardous Materials and Hydrocarbon Management.

(i) During the audit it was apparent that the interim storage areas for fuels, oils and used batteries were not in compliance with consent conditions with most drums not on bunded pallets or within a bunded area.

Ashton have since improved the on site storage condition of fuels, oils and batteries on site by relocating drums to spill-gard bunded pallets and storing new and used batteries within a bunded pallet. Construction of a bunded area for the storage of hydrocarbons at the workshop area had been started at the time of the audit. This should be completed as soon as possible.

(ii) The interim use of workshops at CHPP and HWE, prior to permanent workshop establishment is not in compliance with consent conditions. There were no oil/water separators installed at these locations.

An oil/water separator has been installed at the HWE Maintenance Workshop and is operational. The oil/water separator to be located at the CHPP is due for completion by the end of October. Ashton is currently servicing CHPP mobile equipment at the HWE workshop where the oil/water separator is installed.

2. Environmental awareness training.

Further reinforcement should be undertaken to ensure that in addition to being aware of consent condition requirements, operators are aware of procedures to be used to minimise adverse environmental performance. An operator questioned during the audit at the CHPP was unaware of a procedure for determining whether loading from the raw coal stockpile should cease during windy conditions if dust emissions are excessive.

3. *Dust Control.*

(i) Large bare areas at the CHPP were generating dust during the audit as a result of wind gusts, in between watering by the water tanker. Areas not in use should be revegetated as soon as possible.

(ii) Raw coal stockpiles did not have an automatic spray system. Dust suppression is via cannons and sprays on water tankers. This needs to be rectified as soon as possible to minimise potential dust emissions.

Ashton is currently installing a water spray system on the ROM stockpile at the CHPP.

(iii) Blasting does not occur if wind speeds are >10m/s. This is considered to be too high a limit and a figure of 6m/s would be more acceptable. The blasting limit wind speed criteria should be reviewed.

4. *Waste management.*

Efforts should be made to further increase the extent of recycling. Cardboard and paper is one waste stream that could be easily recycled.

5. *Development Consent administrative matters.*

During the audit it was noted that a number of reports (including performance of the control measures and results of the ambient air quality monitoring system report; Site water Balance recalculation report, and the preparation of a report of complaints received with respect to the construction and operation of the mine) had not been prepared as required by the Consent and sent to the relevant government agencies.

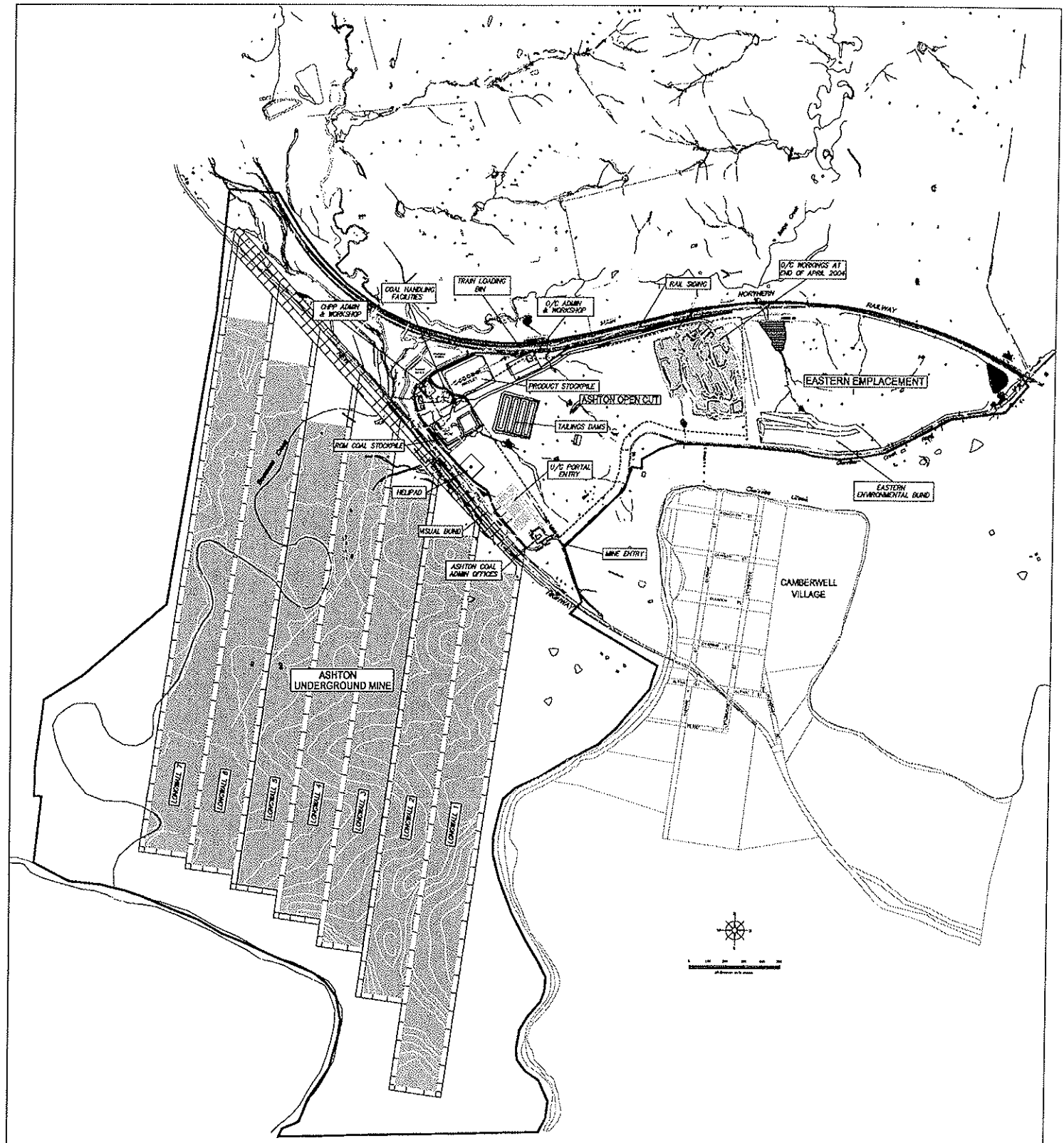
A schedule or other means of identifying when items in the Development Consent are triggered or require action, would facilitate management of this process.

6. *Hours of Operation.*

11 complaints or 4% of total for YTD concerned the mine working outside of permitted operating hours. It is noted that all other activities other than opencut mining are allowed outside of these hours and the community may be unaware of this.

It is recommended that this issue be communicated again via the next community newsletter and at the next CCC meeting.

FIGURES



AshtonCoal

PROJECT LAYOUT

SCALE	As Shown	DATE:	19/05/04
DRAWN	J.F.	FIG. No.:	1
CHECKED	I.J.C.	Cad File Ref.	GP1805804