



SUBMISSION:

CONSULTATION DRAFT
PROTOCOL FOR ENVIRONMENTAL MANAGEMENT
SEPP (AIR QUALITY MANAGEMENT)
MINING AND EXTRACTIVE INDUSTRIES
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Minerals Council of Australia, Victoria

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1 INTRODUCTION

The Victorian Division of the Minerals Council of Australia (MCAVic) is pleased to formally respond to the consultation draft Protocol for Environmental Management for Mining and Extractive Industries prepared under the State Environment Protection Policy (Air Quality Management) prepared by the Environment Protection Authority of Victoria and dated June 2006.

The Minerals Council of Australia (MCA) is the peak industry association that represents the corporate minerals companies in Australia. The members of the Council are engaged in mineral processing, mining, exploration, or the provision of services to the industry and account for more than 85 percent of mineral industry output in Australia. The Victorian Division of the MCA represents the interests of members operating in Victoria.

MCA values the opportunity to comment on the consultation draft. We have identified a number of issues with which we have concerns and provide the following comments for consideration by the EPA when completing the Protocol.

2 JUSTIFICATION FOR THE PEM

The Protocol for Environmental Management (PEM) for air quality management at mines and quarries in Victoria is a requirement of the State Environment Protection Policy (Air Quality Management) (SEPP). The PEM is needed so that mines and quarries may effectively comply with the SEPP.

The SEPP is the chief regulatory instrument and the PEM is to become an incorporated document of the SEPP. The thresholds and standards quoted in the SEPP are primarily established for point sources of emissions to the air. The PEM provides guidance on area based emissions as can occur at mines and quarries.

The MCA participated in a working party with the EPA and other Government agencies during the preparation of the draft PEM. We look forward to the completion of the PEM so that it achieves the objectives of the SEPP in a manner that is appropriate for mines and quarries in an efficient and effective manner.

The PEM has been prepared in a manner that addresses the critical issues relevant to mines and quarries. Its structure is sound and easily followed. The concerns of the MCA discussed below relate to the detail of several features.

3 COMMENTS ON ASSESSMENT CRITERIA FOR ARSENIC

The total inorganic arsenic (As) criteria of 0.003 ug/m³ (annual average) in Table 2 is far too low as it is thought that there are natural background levels in Victoria that exceed this level and many mining operations may be unable to meet the criteria due to the geology in which they operate.

Preliminary analysis and modelling from Victorian gold mining ore and waste samples indicates that Victorian gold producers may have serious difficulty meeting the criteria due to the mineralogy of their ore and waste rock. In addition, the MCA is quite concerned the background levels in Central Victoria will exceed the PEM criteria. It is understood that the criteria is based on Cancer Potency Factors from the Californian EPA Office for Environmental Health Hazard Assessment (1:100,000 risk factor) and it assumes 100% of total inorganic As is bioavailable.

Having a criterion written into policy knowing that it will have an adverse, if not critical, impact on an important and growing regional industry is not how we understand the EPA operates. We therefore seek an urgent review of the As criteria, an analysis of airborne As from waste rock and ore at gold mining operations, and a critical review of natural background levels.

A preliminary analysis by our members indicates that the sampling method used to assess the impact of the mineralogy of the waste rock and ore is critically important and in particular whether or not there is an arsenopyrite crystal in the sample. Our analyses indicate a wide variability.

The high environmental or background levels of As in Central Victorian soils and water supplies are well documented¹. However, the As criteria for air borne particles resulting from soils with high background levels is far less well understood. Research is required to effectively understand the air quality background levels if the criterion is to be included in the PEM.

4 COMMENTS ON MONITORING REQUIREMENTS

The PEM requirement for real time continuous 24 hour gravimetric monitoring is too onerous, costly and in some cases ineffective and intrusive on communities.

Unless appropriate background data sets are available for mine and quarry sites it is necessary to do 12 months of background monitoring prior to modelling for a new proposal then at least 12 months monitoring after commencement.

This gravimetric sampling is supposed to include real time PM₁₀, PM_{2.5}, dust deposition, Respirable Crystalline Silica (measured as PM_{2.5}) (RCS) and various metals including As.

The PEM requires that Level 1 and 2 assessment for As and RCS be modelled to determine predicted annual average concentrations with annual average background data in the model. However, the requirement to include annual average As and RCS background levels in any modelling is impractical as there is no known monitoring or analysis method available to obtain the data required.

It is recommended that EPA develop a reliable, effective and efficient method of monitoring for As and RCS. Unless an effective method of monitoring is found it is recommended that the requirement to determine background levels of RCS and As be removed from the PEM.

The use of hi vol monitors cannot return sufficient sample to enable RCS to be detected. It is understood that EPA has attempted to determine the percentage of RCS in PM_{2.5} samples collected by hi vol monitors and has consistently been unable to detect the levels.

Apart from the fact that it is not feasible to do RCS or As sampling and analysis (although the equipment companies will tell you they can) it can be necessary to set up sampling equipment with three filter papers to attempt to meet the requirements of the PEM. These samplers are expensive to purchase and operate and certainly fail the efficient and effective test. In addition some member companies report adverse community impacts from air quality samplers due to excessive noise and visual intrusion when siting near neighbouring homes.

It is recommended that the PEM is amended to enable more efficient and effective samplers to be used that are also lower in cost of purchase and operation and have far fewer amenity impacts on communities.

5 COMMENTS ON OTHER MATTERS

5.1 Work Area

The PEM effectively defines mining under Section 2.1. However, the “work area boundary as defined by DPI” in the criteria for determining the level of assessment in Table 1 is vague. It is recommended that the **work area** be specifically defined as the area of land covered by the Work Authority issued under the *Mineral Resources*

¹ Hinwood et al, Hair and Toenail Arsenic Concentrations of Residents Living in Areas with High Environmental Arsenic Concentrations, *Environmental Health Perspectives*, vol 111, no. 2, February 2003.

Development Act. The mining licence is granted to a company and provides exclusive rights to extract the minerals within that area. However, work cannot proceed until there is an approved work plan and accompanying Work Authority. The area of a mining licence can cover a far greater area than the area where work is approved. It would be wrong to assume that the work area is the mining licence area.

5.2 Spatial Criteria

The spatial criteria used to determine the level of assessment required in Table 1 is questioned. In particular the MCA has concerns that the 1km buffer is far too big and cannot be justified. We are not aware of any other statutory exclusion zones that are of this extent. In fact, there would be very few areas in Victoria where mining and quarrying occur that are more than 1km from a residence.

It is recommended that the 1km buffer be reduced to 500m. This is consistent with other EPA buffers and therefore has some basis of legitimacy.

5.3 Production Criteria

The production criteria used to determine the level of assessment in Table 1 may very well be applicable to surface mines and quarries and to material from underground mines that is brought to the surface. However, they do not have any relevance to the production levels of underground mines that keep most of their waste rock underground.

The production criteria refer to “tonnes/yr of extraction”. It is recommended that this be clearly defined to include waste rock, ore and quarry product brought to the surface, and excluding waste rock remaining underground.

5.4 Nuisance Dust

Nuisance dust is a particular issue for some mines and quarries and is heavily dependent upon seasonal and other local activity influences. The criteria level for nuisance dust of 4 g/m²/mth has some validity but the MCA questions the time period for averaging. The monthly averaging period in Table 2 makes little or no allowance for seasonal or local influences and is questioned as the criteria could readily be exceeded in any one month. This is far too restrictive and it is recommended that the 4 g/m²/mth remain but that the averaging period be changed to annual as this will allow for season variations.

5.5 GEM (Air Dispersion Modelling)

The SEPP requires that any modelling must be conducted in accordance with Schedule C (of the SEPP) and the Guideline for Environmental Management (Air Dispersion Modelling) (GEM). Schedule C contains very stringent expectations and the GEM has not yet been released. Therefore, it is difficult for the MCA to agree to the modelling requirements of the PEM until the features of the guideline are available and assessed.

5.6 National Consistency

The PEM establishes an approach and a range of thresholds or standards that are not necessarily consistent with the approach and standards used in other jurisdictions of Australia.

The importance of regulatory consistency in Australia to national competitiveness and to companies that operate across more than one jurisdiction is well understood by the Council of Australian Governments.

An example of this inconsistency is the inclusion of non-combustible (or crustal) particulates as PM_{2.5} in the PEM. The revised National Pollutant Inventory has determined that the reporting of non-combustible particulates as PM_{2.5} will not be required due to insufficient scientific evidence of harmful effects.

The MCA is concerned that the detail of the PEM creates another divergence between the States and Commonwealth regulations. The MCA seeks greater consistency in the outcomes of regulation.

6 RECOMMENDATIONS

6.1 Arsenic

Due to the critical uncertainties related to the arsenic criteria included in the PEM and the dramatic impact that this could have on the gold mining industry it is recommended that the EPA urgently review of the arsenic criteria and in particular the analysis of airborne arsenic from waste rock and ore at gold mining operations and the contribution from the natural environment.

6.2 Monitoring

It is recommended that EPA develop a reliable, effective and efficient method of monitoring for arsenic and respirable crystalline silica. Unless an effective method of monitoring is found it is recommended that the requirement to determine and include background levels of arsenic and respirable crystalline silica be removed from the PEM.

It is recommended that the PEM is amended to enable more efficient and effective samplers to be used that are also lower in cost of purchase and operation and have far fewer amenity impacts on communities.

6.3 Other Matters

The following matters are also recommended:

- that “work area” be specifically defined as the area of land covered by the Work Authority issued under the *Mineral Resources Development Act*.
- that the 1km buffer used in the spatial criteria for levels of assessment be reduced to 500m.
- that the production criteria used for the levels of assessment be clearly defined to include waste rock, ore and quarry product brought to the surface and exclude waste rock stored underground.
- that the averaging period for nuisance dust be increased to annual to allow for season variations.
- that the GEM (Air Dispersion Modelling) be urgently released so that its impact on the PEM can be assessed.

6.4 Research

The Victorian Government recently launched a series of major investments to support sustainability called *Our Environment Our Future*². This statement included initiative 12.7 which provides \$2.7 million to be invested into Victoria’s earth resources sector to achieve better environmental outcomes and more community involvement.

As some of the solutions to the issues raised with the PEM involve research and detailed review it is recommended that some of the *Our Environment Our Future* funds be directed to the critical research areas referred to above.

ENDS

² Our Environment Our Future Sustainability Action Statement 2006, Victorian Department of Sustainability and Environment, July 2006.