

## Attachment D      Gap Analysis

Key Environmental Study	Adequacy of 1999 EES Study	Revised or New Study Required?
Air Quality	<p>Since the 1999 EES a new State Environment Protection Policy - Air Quality Management (AQM) was promulgated in 2001 and State Environment Protection Policy (Ambient Air Quality) in 1999.</p> <p>These SEPPs set out the statutory requirements for the management of emissions to the air environment arising from industrial activities including the operation of mining and extractive industries. The PEM: Mining and Extractive Industry (EPA Pub 1191, Dec 2007) is an incorporated document which supports the interpretation of the SEPP. The PEM provides reference to generation of dust emissions. A review of the 1999 EES should be undertaken having regard to the new SEPP and PEM. Although background information from the 1999 Air Quality assessment may be utilised, a new Air Quality Assessment is likely to be required to satisfy the new SEPP objectives and incorporated PEM and other guidelines.</p> <p>Furthermore, the Air Quality Assessment will need to updated to incorporate the revised mining extraction and rehabilitation proposals including impact assessment of potentially new sources and receptors from filling the southern void which was not assessed as part of the 1999 EES.</p> <p>The scope of the Air Quality assessment would need to be discussed and agreed with EPA, however the methodology is likely to be the similar to the 1999 study.</p>	Yes – New Study
Noise	<p>Since the 1999 Noise Assessment was undertaken SEPP (N-1) has been subject to variations and the introduction of guidelines for Noise control in Rural Victoria.</p> <p>The 2012 Big Hill project is likely to require re-assessment of background noise levels and modelling of potentially new sources and receptors associated with the revised mining and rehabilitation proposal against the following updated policy and guidance published since the 1999 EES:</p> <ul style="list-style-type: none"> <li>• EPA Publication 1411 Noise from Industry in Regional Victoria (October 2011)</li> <li>• EPA publication 1254 Noise Control Guidelines (2008)</li> <li>• Department of Primary Industry Environmental Guidelines, Ground Vibration and Air blast Blasting Limits for Blasting in Mines and Quarries, 2001</li> <li>• Updates to Australian Standards AS1055 :1997 “Acoustics – Description and Measurement of Environmental Noise” as relevant</li> </ul> <p>The potential noise sources and receptors and impacts of the revised proposal are potentially different from that proposed in the 1999 EES, with the southern void now proposed to be filled, the northern and southern voids filled in stages. Changes in noise control requirements and opportunities for improved (lower noise emitting) machinery and mining methodologies to reduce noise impacts should now be considered as part of an updated noise assessment to further support the new proposal.</p> <p>The scope of the Noise Assessment would need to be discussed and agreed with EPA.</p>	Yes – New Study

## Attachment D Gap Analysis

Key Environmental Study	Adequacy of 1999 EES Study	Revised or New Study Required?
Blast Effects	<p>A new Blasting Study is required for the Project, given the depth and dimensions of the pits have been changed. Furthermore, SGM have collected substantially more information on ground vibration over the last 12 years which will allow more accurate calibration of any modelling.</p> <p>It is envisaged that blasting requirements will be limited to the deeper sections of the pitting activity as free dig and ripping techniques become restrictive to transitional zone rock types. The proposed pits are approximately -90MRL deep with transitional rock zones which may require blasting presenting at -80mRL to -95mRL.</p>	Yes – New Study to consider above ground mining impacts
Visual Impact	<p>A new Visual Impact study is required for the 2012 project due to the following which impact on the study conclusions:</p> <ul style="list-style-type: none"> <li>• the development footprint has changed;</li> <li>• the southern void is now proposed to be filled which substantially improves the landscape impact;</li> <li>• the vegetation has grown in the passed 12 years since the 1999 proposal which may reduce visual impacts</li> <li>• the size of the waste rock emplacement is substantially reduced from the 1999 proposal.</li> </ul> <p>The assessment needs to consider any regional policy regarding landscape values that may have been introduced since the 1999 Landscape Assessment was completed.</p>	Yes – New Study
European Heritage	<p>The current development does not propose development outside of the footprint which was assessed for the 1999 EES project. Therefore the Heritage Study undertaken in 1999 by <i>'Heritage Management Consultants Pty Ltd'</i> an be utilised as a true reflection of current European Heritage values within the project area.</p> <p>A review of the 1999 European Heritage assessment is warranted to consider the implications of the project due to potential changes to historic values of sites identified in the 1999 assessment.</p>	Yes – Review report. Re-survey not required.
Cultural Heritage	<p>An Archaeological survey and assessment of the project area and surrounds was undertaken in 1999, which determined there were no Aboriginal sites within the project area. Due to the current proposal being within the footprint of the 1999 it can be reasonably determined that the 1999 assessment findings are still current.</p> <p>The <i>Aboriginal Heritage Act 2006</i> was gazetted in May 2007.</p> <p>A review of the 1999 assessment is warranted to consider if there is any implications for this project as a result of the new legislation.</p>	Yes – Revise Report. Resurvey not required.
Economics	<p>The economic study considers the Stawell economy and mining operations in 1999. The underground operations are currently in closure mode. The study would need to be reviewed to consider the current economic environment and remodel accordingly consider the mine is currently in closure mode.</p>	Yes – New Study

## Attachment D      Gap Analysis

Key Environmental Study	Adequacy of 1999 EES Study	Revised or New Study Required?
Public Infrastructure	<p>This study will need to be revised to consider impact on any changes to land ownership and new infrastructure introduced to the site since the 1999 proposal. An example is management of the relocation of the telecommunications tower on Big Hill and fibre optic underground cables.</p> <p>It is likely that since the 1999 new policies and procedures have been implemented by authorities to manage infrastructure disturbance and therefore there the consultation with infrastructure owners and occupiers would need to be revisited.</p>	Yes – Revised Study
Traffic and Transportation	<p>The traffic study undertaken in 1999 assessed the traffic conditions and transportation route implications surrounding the mine site.</p> <p>The results of this study can be applied to the current proposal however a new traffic study is warranted to consider current traffic conditions and changes in traffic movements and management since the 1999 traffic study.</p> <p>The traffic report needs to consider changes to Council traffic policies and change in staff numbers due to closure of underground mining operations which will have implications on the findings of the report.</p>	Yes – New Study
Surface Water Management	<p>The water management plan was based on the 1999 development footprint.</p> <p>The surface water management assessment would need to be redeveloped to consider mine water management (the implications of backfilling the pit voids progressively and managing inflows into the pits) and sediment and erosion control.</p> <p>The new study would also need to revisit surface water management to consider impacts and management measures to fill the southern void.</p>	Yes –New Study
Groundwater	<p>It is anticipated that groundwater will not be intersected during mining, which is the same assumption made in 1999.</p> <p>The assumptions of groundwater depth will be reviewed, however, it is not anticipated that any significant works will be necessary.</p>	No
Hazard and Risk	<p>A Hazard and Risk Assessment study needs to be carried out to assess the impacts and risks of the proposed project activities, to provide early stage input to the technical studies, and to provide feedback to project design if appropriate.</p> <p>Since 1999 the approach to environmental risk assessment has advanced considerably and become less qualitative, more logical, robust and integrated with technical studies. In addition, the project design and local conditions may have materially changed. For these reasons, a full risk assessment is required.</p> <p>In relation to environmental assessment DPCD and other Regulators prefer a structured risk based framework that applies a semi quantitative approach.</p> <p>The approach to risk assessment involves:</p> <ul style="list-style-type: none"> <li>• Clear articulation of the risk assessment context and objectives.</li> <li>• Identification of risk events, their likelihoods and consequences using workshops with key stakeholders and technical specialists.</li> </ul>	Yes – New Study

## Attachment D      Gap Analysis

Key Environmental Study	Adequacy of 1999 EES Study	Revised or New Study Required?
	<ul style="list-style-type: none"> <li>• Semi-quantitative assessment of the risk and generation of outputs (graphical and tabulated) that:               <ul style="list-style-type: none"> <li>○ clearly show the impacts and risks in relation to set targets</li> <li>○ demonstrate the impacts and risk to key stakeholder assets</li> <li>○ provide feedback to project design</li> <li>○ provide direct input into an environment management plan</li> </ul> </li> </ul>	
Health Effects	The Health Effects study undertaken in 1999 largely relied on the results of the air, noise and blast studies and would need to be revisited to consider the current proposal and results from these studies.	Yes – New Study
Social Impact Assessment	<p>The social impact assessment for the 1999 EES was completed 13 years ago. The community has changed within this time, as has the project proposal. Since the original SIA was prepared, the planning legislative and policy framework for SIA's also involves more robust requirements of proponents and therefore a new social impact assessment is warranted.</p> <p>A social impact assessment is likely to include the following:</p> <ul style="list-style-type: none"> <li>• Review of the 1999 EES findings and social impact assessment.</li> <li>• Review of the social and economic influences in Stawell.</li> <li>• Social and demographic profile of study area and the community based on 2011 ABS Census data. Key variables will also be subject to time series analysis, so that any changes between the previous and current studies can be assessed.</li> <li>• Assessment of community resources, facilities, valued sites and community activities.</li> <li>• Development of a community consultation program designed to identify landowner and community issues and the social impacts of the proposal.</li> <li>• Meetings with service providers responsible for delivering a range of social and community services and facilities to the Stawell township.</li> <li>• Either or a combination of both telephone or face-to-face interview program of a representative sample of landowners/residents and organisations/interest groups to determine degree of social impact.</li> <li>• Data analysis from information collected as part of the land use planning, economic assessment and GIS mapping.</li> <li>• Develop a series of assessment criteria based on relevant policy and criteria.</li> <li>• Assessment of likely social impacts using agreed evaluation measures/assessment criteria.</li> <li>• Fill any gaps, if necessary, with inputs from other technical specialists such as transport/traffic, land use, economic, air quality, and acoustic assessments.</li> <li>• Identify mitigation measures and social impact assessment after mitigation.</li> </ul>	Yes – New Study

## Attachment D      Gap Analysis

Key Environmental Study	Adequacy of 1999 EES Study	Revised or New Study Required?
Flora and Fauna	<p>A Flora, Fauna and Habitat Hectare assessment was undertaken by <i>Ecology and Heritage Partners Pty Ltd</i> for both the Big Hill (northern pit) and Davis Pit (southern pit) localities in March 2012.</p> <p>These studies involved on onsite flora and fauna assessment which identified vegetation types, qualities and quantities.</p> <p>The studies considered the implications of the <i>Flora and Fauna Guarantee Act 1998</i>, and the <i>Environment Protection and Biodiversity Conservation Act 1999</i>.</p> <p>Further requirements of the study include:</p> <ul style="list-style-type: none"> <li>• Revised net gain calculations once the footprint of the area of disturbance is confirmed.</li> <li>• Targeted flora surveys if higher quality remanent are proposed to be disturbed.</li> <li>• Development of an Offset Management Plan to comply with the <i>Native Vegetation Framework for Action</i>.</li> </ul> <p>Any impact on F&amp;F from waste rock placement or haul road??? If so will need F&amp; F study to cover this site?</p>	Study revised to include additional requirements.
Planning	<p>The planning provisions which cover the site have changed since the 1999 proposal. The planning study would need to be updated to include:</p> <ul style="list-style-type: none"> <li>• Changes to local and state planning policy</li> <li>• Changes to planning provisions (zone and overlay controls)</li> <li>• Changes to the statutory assessment and approvals process since the 1999 project</li> <li>• Land use changes since the 1999</li> </ul>	Yes – New Study
Community and Stakeholder Consultation	<p>A robust community and stakeholder consultation plan needs to be developed to inform the development of the project. This should include a Communications Plan that addresses aspects such as providing public information to control messaging, responding to media enquiries, proactively seeking media support for the project, project team communication protocols, This program can be informed by historical information in the 1999 EES, however a new consultation program would need to be developed and executed to respond to the new project and communicate the differences to the 1999 project. Identifying the current community and relevant stakeholders is critical to this. A current Consultation and Communications Plan will also reduce risks of delays to the project and reputational damage to the proponent by proactively addressing potential issues before they escalate.</p> <p>A new program has potential to include:</p> <ul style="list-style-type: none"> <li>• A communications protocol for communications with consultant team, media, community and stakeholder groups</li> <li>• Community information centre or point of contact</li> <li>• Community Open Days, site visits and/or Feedback Booths/Public Displays in local shopping centres</li> <li>• One-on-one interviews/discussions with residents surrounding the site</li> </ul>	Yes – New Consultation Plan

## Attachment D      Gap Analysis

Key Environmental Study	Adequacy of 1999 EES Study	Revised or New Study Required?
	<ul style="list-style-type: none"> <li>• One-on-one targeted meetings with key stakeholder representatives including approval agencies</li> <li>• Employee consultation</li> <li>• Establishing a study specific email address.</li> <li>• Development of a website dedicated to the project. Potential for this to include a moderated online blog forum.</li> <li>• Establishing a social media presence on Facebook and Twitter</li> <li>• Preparation of a Feedback Form template (also suitable for website)</li> <li>• Preparation of Study Bulletins/Newsletters at key project milestones</li> <li>• Preparation of FAQs for website and agreed response lines to common queries.</li> <li>• Preparation of media releases to control timing of information announcements and promote key messages.</li> <li>• Local newspaper advertising and articles when required.</li> <li>• Consultation with a government consultative committee or panel</li> <li>• Establishing and facilitating a Community Reference Group.</li> <li>• Project contact database for dissemination of information.</li> <li>• Response to written submissions.</li> </ul>	
Rehabilitation Plan	The Rehabilitation Plan included in the 1999 EES needs to be updated to reflect the new development.	Yes – Revised Study
Environment Management Plan	The EMP for the site needs to be redeveloped to include changes to environmental management practise which have been adopted and area accepted best practice since 1999. The monitoring program would also need redevelopment to reflect the targets and recommendations in the air, noise, blasting, water, sediment and erosion control studies.	Yes – New EMP
Greenhouse Gas Assessment	<p>Greenhouse gas is now considered an environmental impact which requires assessment as part of any major development proposal. A greenhouse gas assessment has not part of the 1999 EES study.</p> <p>A greenhouse study for this project would include:</p> <ul style="list-style-type: none"> <li>• Review of baseline greenhouse gas/energy data for existing operations</li> <li>• Review of proposed energy use for construction activities</li> <li>• Estimation of energy uses for construction and operating phase</li> <li>• Identification of means of reducing energy usage and greenhouse gas during construction; and</li> <li>• Review of proposed ongoing energy use of the facility and how can it be minimised.</li> </ul>	New Study