

23 July 2018

Prof. Mary O'Kane  
Chair  
Independent Planning Commission of NSW  
GPO Box 3415  
Sydney NSW 2001

Dear Mary

**Response to Review of Rehabilitation Strategy for Rixs Creek Mine - Continuation of Mining (SSD\_6300)**

The Bloomfield Group have commissioned AECOM Australia Pty Ltd (AECOM) to provide a high level review of the document titled *“Review of rehabilitation strategy for Rix’s Creek Mine- Continuation of Mining project for the Environmental Impact statement (EIS) for the IPCN”* (the Review) by Corinne Unger 2018 (here after referred to as the Review).

It is acknowledged that there are several areas noted within the Review which will provide improvement of rehabilitation management which The Bloomfield Group will incorporate as part of the approved Continuation Project.

The scope of this review was to provide commentary and feedback regarding:

- Issues raised or recommendations made within the Review and where they have been addressed in either the EIS, Response to Submissions or Revised Response to Submissions documents provided to the IPCN.
- Reference to which NSW Regulating Authorities are responsible for the varying issues identified in the Review; and
- What requirements or documentation are necessary to facilitate the required ongoing flexibility in rehabilitation to achieve sustainable outcomes at the time of mining completion.

The Director General’s Requirements were provided for the Rix’s Creek Continuation Project in March 2014. Specifically the requirement for Rehabilitation consisted of the following:

*“Rehabilitation – including the proposed rehabilitation strategy for the site (assuming closure of the mine upon completion of the proposed development), having regard to the key principles in the Strategic Framework for Mine Closure, including: - rehabilitation objectives, methodology, monitoring programs, performance standards and proposed completion criteria; - nominated final land uses and land forms (including cross sections), having regard to any relevant strategic land use planning or resource management plans or policies; - justification for inclusion and proposed location of a final void, and consideration of alternatives; and - the potential for integrating this strategy with adjacent mines.”*

The Bloomfield Group, through provision of the EIS, Rix's Creek Mine Rehabilitation Strategy, Response to Submissions and Revised Response to Submissions, firmly believe it has addressed the Director Generals Requirements. This is furthermore supported by the response received from the Department of Industry, Resources and Energy, on their review of the Environmental Impact Statement noting that *“The Division notes that the EIS has identified general rehabilitation strategies and objectives and adequately describes the functional domains of the project. Specific performance objectives and standards of each domain have been satisfactorily described. The Division requires final landform design to be consistent with the surrounding topography and the EIS has provided objectives and criteria to which they will be implemented.”*

At the time of the above response the Department of Industry, Resources and Energy were the Government Regulator for rehabilitation in NSW.

Table 2 provides the response from The Bloomfield Group to the key issues raised in the Review which was undertaken by Corinne Unger, Mine Rehabilitation and Closure Planning Specialist. The Review provided a high-level assessment of two documents for the Independent Planning

Commission of NSW (IPCN), for the purpose of supporting the evaluation process for the IPCN review of the Rix's Creek Continuation of Mining (hereafter referred to as the Project):

- EIS Appendix Q Rehabilitation Strategy (19 August 2015 by AECOM) 55 pages; and
- Continuation of Mining project EIS, Response to Submissions (20 October 2016 by AECOM).

To aid in the interpretation of the response to the Review Table 1 details the acronyms used.

**Table 1 Definition of acronyms used in the response**

<b>Acronym</b>	<b>Definition</b>
AEMR	Annual Environmental Management Report
CCC	Community Consultative Committee
DOI	Department of Industry, Resources and Energy
DPE	NSW Department of Planning and Environment
DPE (DRG)	NSW Department of Planning and Environment- Division of Resources and Geosciences
DPE (RA)	NSW Department of Planning and Environment- Resource Assessments
DPE (RA-C)	NSW Department of Planning and Environment- Resource Assessments- Compliance.
DPE (RR-CO)	NSW Department of Planning and Environment- Resources Regulator Compliance Operations
EA	Environmental Assessment
EPA	New South Wales Environment Protection Authority
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan
HRA	High Risk Activity
MOP	Mining Operations Plan
MR&C	Mine Rehabilitation and Closure
MSP	Mine Survey Plan
RCM	Rix's Creek Mine
RPS	RPS Consulting ( RPS Group Plc)
RRTS	Revised Response to Submissions- Nov 2017.
RS	Rehabilitation Strategy
TBG	The Bloomfield Group
UHMD	Upper Hunter Mining Dialogue

Table 2 Response to Review

Issue Raised	RCM Response	Justification	Why the issue raised is not applicable	NSW Regulator to which the issue relates
<b>Section 1 - Introduction</b>				
<b>Section 2 -Summary</b>				
The Bloomfield Group have been mining at Rixs Creek and undertaking rehabilitation for many decades yet no evidence is provided in the RS	The Strategy relates to the proposed project and not the current mining area.	Director-General's Requirements (DGRs) issued for the Rix's Creek Continuation of Mining Project (SSD 13_6300) on 3 March 2014		DPE (RA)
	Information on the status and history of the rehabilitation program is provided through the Annual Review / AEMR document and Annual inspections by DPE (RR)	Annual Review / AEMR document and biannual inspections		DPE (RR-CO)
	Information on the progression toward established rehabilitation criteria is provided through bi-annual assessment and provided through the Annual Review/ AEMR reporting process.	Annual Review / AEMR document and biannual inspections		DPE (RR-CO)
	Standards for the rehabilitation program are defined through the performance indicators and criteria in Section 1.3.2 of the RS and the current MOP	Section 1.3.2 of the RS Current MOP		DPE (RR-CO)
Stakeholder engagement	When the RS and or MOP are updated then the Sections on Stakeholder Engagement could be updated to provide greater reference to the dialogue that occurs in context of MR&C.	Update future RS and MOP's		DPE (RA).
MR&C Domains are omitted	The Final Void is listed as a Domain in Table 2. The Tailing emplacement Area is listed as a Primary domain which as a function of rehabilitation changes to a Secondary Domain of Rehabilitation – pasture.	RS – Section RS – Table 2 RS – Figure 2&3 noting that revised figures were provided with the RRTS		DPE (RR-CO)
RS doesn't adequately integrate all closure	The RS is written to address the proposed development not the current operation	DGRs issued for the Rix's Creek Continuation of Mining Project (SSD 13_6300)		DPE (RR-CO)

Issue Raised	RCM Response	Justification	Why the issue raised is not applicable	NSW Regulator to which the issue relates
requirements of the Development Consent		on 3 March 2014		
RS does not address environmental protection matters – EPL related	The EPL3391 does not regulate mine closure		EPL regulate load based licencing and pollution – not rehabilitation.	
RS does not contain a MR&C specific risk register	A risk register is provided in the MOP.	MOP – Appendix A		DPE (RR-CO)
	Management actions aligned to the identified risk are provided in the MOP	MOP		DPE (RR-CO)
Long term legacy issues such as geomorphic stability are not sufficiently detailed	Monitoring of geomorphic stability is addressed in the site based monitoring program	Site based monitoring program		DPE (RR-CO)
	Rehabilitated lands are inspected annually by DPE (RR-CC) inspectors	Annual inspections		DPE (RR-CO)
	Key aspects of the monitoring program are reported on via the Annual Review	Annual Review		DPE (RR-CO)
Legacy risk of voids are inadequately identified	Issues of groundwater are addressed in the RPS report. This information will be used as baseline data and in future mine closure documents	RPS report		
Commitments are brought together in a single table etc.	Commitments are made in the MOP – the document being reviewed is a Strategy and as such the details are not in such an overarching report	MOP		
Knowledge gaps not addressed in a timely manner	Knowledge gaps are considered in site based EMS and in more detail through the TARP and risk assessment process		The MOP process allows review and update to capture any knowledge gaps.	
Bibliography vs References	The term bibliography is used as it contains all works cited in the RS, plus those other works that have been consulted.		The RS is a strategy document not scientific paper forming evidence toward an argument. It is a reference document.	

Issue Raised	RCM Response	Justification	Why the issue raised is not applicable	NSW Regulator to which the issue relates
<b>Section 3 – MR&amp;C</b>				
Mining Operation Plan will substitute the Rehabilitation Management Plan	It is accepted by the DPE (RR-CO) that the MOP does satisfy the condition for a Rehabilitation Management Plan.	Letter from DOI dated 7/12/2015 to DPE Ref BN15/8578		DPE (RR-CO)
Comments on terminology	References are noted			
<b>Section 3.1 – Terminology</b>				
Changing title of document to Mine Rehabilitation and Closure Strategy	The role of the current MOP provides a platform for a prescriptive approach to landform and landscape design and an approach that facilitates the ability to incorporate change in context of the land use component of mine closure. In doing so opportunities are provided for optimising post mine land use in context of the environmental, social and economic perspective	DPE (RR-CO) MOP Guidelines		
<b>Section 4 – Stakeholder Expectation for mine rehabilitation and closure</b>				
Engagement does not address stakeholder expectation of MC&R at Rixs Creek in the context of the continuation of the mining plan	<p>The EA process enables any stakeholder to provide feedback on their expectation relating to mine closure.</p> <p>During the EA process the site has maintained a series of community consultative meetings, newsletters, open contact details and mine site open days. Recently the Rix's Creek CCC has included the wider audience including the RCN CCC</p>			
Engagement does not address stakeholder expectation of MC&R at Rixs Creek in the context of the continuation of the mining plan –	The Rixs Creek website provides a range of site based contact information, details from the community hotline, names of the members of the Community Consultative Committee (CCC) and copies of minutes of the CCC			
(cont)	An extraordinary meeting was held in January 2018 providing an update to the			

Issue Raised	RCM Response	Justification	Why the issue raised is not applicable	NSW Regulator to which the issue relates
	CCC regarding the progress and submission of the RRTS			
Company engages in one way distribution of information	<p>Accepted that Section 3 of the RS could be enhanced based on the following current approach to addressing the participation goals:</p> <ul style="list-style-type: none"> <li>• Inform, - as per newsletters, community information line</li> <li>• Consult – as per the CCC which is a direct forum for community representatives,</li> <li>• Involve – as per open days,</li> <li>• Collaborate – meeting with adjoining mines and regulatory agencies including the UHMD</li> <li>• Empower – Publishing of the complaints register on the company website</li> </ul>	One of the primary objectives of the UHMD is community consultation on mine rehabilitation standards, final land use and mining voids	The Strategy relates to the proposed project and not the current mining area. TBG have addressed the requirements of the RS.	
Stakeholder feedback to be tracked	Publishing of the complaints register on the company website and minutes from the CCC.			
Discussion on Security Deposits	The RS details the proposed project and as such does not provide an analysis of the historic or current rehabilitation program.			
Discussion on Security Deposits	<p>The Rehabilitation Cost Estimate (RCE) and the information which underpins the RCE is contained in the MOP which covers the currently disturbed area and the area to be disturbed through the MOP period which is approved by the DPE (ESU).</p> <p>The RCE encompasses all lands within the Mining Lease through until these lands are relinquished</p>	MOP  Rehabilitation Cost Estimate		DPE (RR-CO)
Engagement with stakeholders on status of rehabilitation	<p>The status of the rehabilitation over the life of the mine is provided in the MOP.</p> <p>The status of the rehabilitation</p>	MOP		DPE (RR-CO)

Issue Raised	RCM Response	Justification	Why the issue raised is not applicable	NSW Regulator to which the issue relates
and need to resolve issues as they occur rather than left to the end of the life of the mining operation	objectives are tracked by monitoring programs which are based on the performance indicators and criteria which are listed in the MOP  The Annual Review provides information derived from the bi-annual monitoring program whilst also defining actions and timeframes for addressing these issues, this process includes rehabilitation inspections by the DPE (RR-CO)	Annual Review		DPE (RR-CO)
<b>Section 5 – Social Aspects</b>				
Evaluation of social risk and opportunities of MR&C should be undertaken	N/A		The DGR's do not require a social impact as part of the RS.	
Evaluation of social risk and opportunities of MR&C should be undertaken	N/A		The RS encompasses the Rix's Creek site and as such should not consider the closure of the Bloomfield Mine	
<b>Section 6 – Integration of regulatory requirements for MR&amp;C</b>				
The RS should provide a central orientation point which brings together all relevant regulatory requirements and guidance in an integrated manner	Noted – the addition of an Appendix to the RS could be provided that shows the linkages to the sites management plans and legislative framework under which the site operates			
Heritage aspects are not addressed adequately in the RS	The management of the Coke Oven heritage areas is addressed under the <i>Coke Ovens Conservation Plan 2006</i> (under the direction of the Heritage Council of NSW) as referenced in Section 4.2 of the RS	RS – Section 4.2  <i>Coke Ovens Conservation Plan 2006</i>		

Issue Raised	RCM Response	Justification	Why the issue raised is not applicable	NSW Regulator to which the issue relates
	Aboriginal Cultural Heritage Assessment for the project has been approved by OEH who along with DPE will also be the regulators for the Aboriginal Cultural Heritage Management Plan post consent.			
<b>Section 7 – MR&amp;C Domains</b>				
Definition of domains spatially and conceptually	Noted – reference should be provided in the RS to the current MOP, where the domains are discussed in greater detail. However consideration should be given to the fact that the location of the domains is subject to variation and changes in accordance with the life of the mine, as reflected in the MOP	MOP		
Final void domain is excluded from Table 6	Noted – Table 6 to be updated in RS	RS – Table 6		
Heritage domains are not included in Tables 5 and 6	Noted – Tables 5 and 6 to be updated with information to be sourced from the <i>Coke Ovens Conservation Plan</i> noting that the Heritage Domains are not disturbed.	RS – Tables 5 and 6 <i>Coke Ovens Conservation Plan</i>		
Water management domains are not addressed	As stated in Section 4.4 of the RS the Water Management Domain includes components of the network of dams, pipes, pumps and drainage lines that compose the Mine water management system that is in place to control the movement of water around the site. These include sedimentation, diversion, mine water and water supply dams but exclude the tailings emplacement areas.	Section 4.4 of the RS		
Confusion between operational requirements and MR&C requirements	Amended Figures provided through the RRTS process			

Issue Raised	RCM Response	Justification	Why the issue raised is not applicable	NSW Regulator to which the issue relates
<b>Section 7.1 – Tailings Domains</b>				
Figure 2 showing North Pit and Tailings Emplacements	Amended Figures provided through the RRTS process			
Figure 5-1 includes tailing emplacements however Figure 5-2 tailings not shown	Amended Figures provided through the RRTS process, refer F7-5			
Need to show the location of Tailings Emplacement Areas in a post mining landform	Currently regulated through HRA process with DPE (RR-CO) and recorded on MSP			DPE (RR-CO)
Fig 3 shows TEA as a water management area	Amended Figures provided through the RRTS process, see F7-5			
Pit 2 – TEA 3 is not marked on Fig 3	Currently regulated through HRA process with DPE (RR-CO) and recorded on MSP			DPE (RR-CO)
Need to add text to RS to explain changes over time in context of the domains	Noted – to amend RS with explanatory statement which references the DPE (RR-CO) MOP Guidelines	DPE (RR-CO) MOP Guidelines		DPE (RR-CO)
Tailing emplacement Domains require more attention in the risk and opportunity assessment	Noted – Review the MOP Risk Assessment.  Tailings areas are recorded on MSP lodged with DPE – (DRG)			DPE – (DRG)
<b>Section 7.2 Final Voids Domains</b>				
No objectives, performance indicators or criteria for final voids	Noted – RS to be updated to reflect final void objectives, indicators and criteria			
Fig 3 – description of final void as a final depression	It is a depression as no final high walls are left in the post mining landscape			
Water balance for final void is required	Issues of groundwater are addressed in the RPS report. This information will be used as baseline data and in future mine closure documents that	RPS report		

Issue Raised	RCM Response	Justification	Why the issue raised is not applicable	NSW Regulator to which the issue relates
	encompass the final void			
<b>Section 7.3 Heritage Domains</b>				
Heritage domains are omitted from the post mining landform	Noted – Tables 5 and 6 and Fig 3 to be updated with information to be sourced from the Coke Ovens Conservation Plan	RS – Tables 5 and 6 and Fig 3  Coke Ovens Conservation Plan		
<b>Section 7.4 – Aesthetic Domain</b>				
Overlay information on the primary visual /aesthetic domains on the landscape to facilitate objective setting, management and completion	Noted – To source visual landscape information from relevant EA report, Appendix X-Landscape Character and Visual Amenity Assessment as well as updated figures in RRTS section 7.13 Final Void and Landform and add to RS			
<b>Section 7.5 – Underground mining domain</b>				
The domain of underground mining (past and future) must be included in the domain maps	All historic underground mine workings are recorded on the MSP lodged with DPE (DRG)	RS – Fig 3		DPE (DRG)
The domain of underground mining must have clear post mining objectives, indicators and criteria	Historic underground workings that have been removed through open cut mining are included in Table 6. Remaining historic underground workings are regulated through the Mine Subsidence Board NSW	RS – Table 6		Mine Subsidence Board NSW
<b>Section 7.6 - Summary</b>				
Domains which are omitted	Addressed in previous comments			
<b>Section 8 – Management of knowledge and identification of knowledge gaps</b>				
Evidence of successful rehabilitation from the past going forward	Information is available through Annual Reviews, inspections, regulatory authorities	Annual Reviews		
	The AEMR and monitoring results are posted on the company's website	Company website		
Not easy for the reader to see how land capability has	Figure 14.3 provided in 2015 EA for new disturbance area.  Total site post mining land			

Issue Raised	RCM Response	Justification	Why the issue raised is not applicable	NSW Regulator to which the issue relates
been preserved by the rehabilitation	capability can be provided. Revised Table presented in RRTS in Table 3.6 to show post mine land capability comparison			
Separation of Class 4 is not explained	Table 3 show division of Class 4 based on slope <math><10^{\circ}</math> or equal to <math&gt;10^{\circ}&lt; an="" before="" comes="" explanation="" in="" math&gt;,="" paragraph="" table<="" td="" the="" this="" together="" which="" with=""> <td>RS – Table 3</td> <td></td> <td></td> </math&gt;10^{\circ}&lt;>	RS – Table 3		
Not clear if land capability classes of current mine landforms have been independently determined	RS is about the proposed mining operation			
	Information is available through Annual Reviews and MOP approval process,			
Synthesised document that draws out the knowledge for each domain	Noted – this may be provided on the company website as an overarching document. In turn this document is referenced in the RS.			
<b>Section 9 – Rehab objectives, standards and completion criteria</b>				
Comment on missing domains etc.	Refer previous responses			
Clarification of objectives, aims and goals	Noted			
The Strategy document must clearly provide links to evidence of what is known, and also what is not known explaining how that knowledge will be gained	Noted - RS could include a reference to these that demonstrate the status of the rehab in context of the performance indicators and criteria.  The AEMR / Annual Review and monitoring results are posted on the company's website.	RS – Appendix to be updated		
<b>Section 10 – Risk and opportunity evaluation for MR&amp;C strategy</b>				
Need for risk and opportunity evaluation in the RS	This assessment of risk is documented in the MOP.  However, it is noted that	MOP – Section 3 (Risk Assessment) and 9 (TARP)		DPE (RR-CO)

Issue Raised	RCM Response	Justification	Why the issue raised is not applicable	NSW Regulator to which the issue relates
	future risk assessment should consider in greater detail the issue of mine closure, in doing so optimising opportunities for an that allows for changes to post mine land use			
The MOP cannot , be considered a suitable substitute for the rehabilitation plan	The MOP provides flexibility and allowance to increase or modify the required criteria and in doing so focus on new and emerging issues. A 20 year old RS reviewed at the time of closure would not have this degree of flexibility			DPE (RR-CO)
Changes to the MOP Guidelines		N/A	Outside the scope of the Rixs RS	
<b>Section 10.2</b>				
Water management and design criteria not adequately described	Information on water management and the void is provided in the RPS report	RPS report		
No evidence of modelling of geomorphic stability of landforms	Noted – however monitoring parameters encompass landform stability.			
	Where areas of rehabilitated land show landform instability they are recorded during the monitoring program.  The management of these sites are defined in monitoring reports and actioned in accordance with the commitment of the Annual Review			DPE (RR-CO)
Post closure water management is not adequately addressed	Water quality is monitored as part of the EPL and Water Management Plan.	EPL/ Development Consent= Water Management Plan.		NSW EPA / DPE (RA-C)
	The management of sediment and erosion control are monitored as part of the annual monitoring program and the indicators and criteria listed in the RS and the MOP.	Annual reporting and monitoring program		
	An ESCP has also been developed for RCS	ESCP		

Issue Raised	RCM Response	Justification	Why the issue raised is not applicable	NSW Regulator to which the issue relates
More detailed catchment / sub catchment design for mined landforms	This information would be presented in the more detailed management plans and the MOP and not in the overarching RS	Site based management plans and MOP		
Increase details on climate change	This information would be presented in the more detailed management plans and the MOP and not in the overarching RS	Site based management plans and MOP		
<b>Section 10.3 – premature and temporary closure</b>				
Risk of premature closure	Risk is addressed via the RCE and the associated Security Deposits that are requirement of mining in NSW.			DPE (RR-CO)
<b>Section 10.4 - Value of land ( and water) post closure</b>				
Evidence of productivity of post mined lands	<p>Bloomfield has commenced the process to demonstrate the suitability of the rehabilitation for the proposed final land use of grazing.</p> <p>If requested evidence could be provided of pasture productivity from other mines across the Hunter region. These studies were also reviewed by studies undertaken by the NSW Minerals Council and NSW DPI</p>	<p>NSW Minerals Council – <a href="http://www.nswmining.com.au/dialogue/latest-projects/land-management/grazing-study">http://www.nswmining.com.au/dialogue/latest-projects/land-management/grazing-study</a></p> <p>DPI – <a href="https://www.dpi.nsw.gov.au/about-us/media-centre/releases/2017/grazing-study-shows-positive-results-for-rehabilitated-mine-land">https://www.dpi.nsw.gov.au/about-us/media-centre/releases/2017/grazing-study-shows-positive-results-for-rehabilitated-mine-land</a></p>		
Opportunities for collaboration across the mining industry to optimise post mining land use	Noted – Recent forums where Rixs have proactively been involved include the Tom Farrell Institute Mine Rehabilitation Program and the NSW Minerals Council’s Upper Hunter Mining Dialogue program	<p>NSW Minerals Council - <a href="http://www.nswmining.com.au/dialogue/home">http://www.nswmining.com.au/dialogue/home</a></p> <p>Tom Farrell conference - 2016 <a href="http://minedlandrehab.weebly.com/uploads/2/3/7/3/23738054/tfi_com_munique_6th_mine_rehab_conf_20160503.pdf">http://minedlandrehab.weebly.com/uploads/2/3/7/3/23738054/tfi_com_munique_6th_mine_rehab_conf_20160503.pdf</a></p> <p>Tom Farrell conference – 2017 <a href="https://www.tomfarrellinstitute.org/2017-mine-tours.html">https://www.tomfarrellinstitute.org/2017-mine-tours.html</a></p>		

Issue Raised	RCM Response	Justification	Why the issue raised is not applicable	NSW Regulator to which the issue relates
<b>10.5 Evidence of agricultural land rehab and native ecosystems</b>				
Evidence to show that rehab meets the criteria	The RS is for the future project not an assessment of the past			
	Monitoring data and reports as shown in the Annual Review	Annual review		DPE (RR-CO)
<b>Section 11- Final Void</b>				
Final void can't easily be interpreted from Fig 3	Noted – refer updated Fig 1-2 in the RRTS	Refer RRTS document		
Water quality and water management in the void	Noted – refer RPS report Appendix S 2015 EA, Ground Water Impact Assessment and Appendix G RRTS, Ground Water Specialist Response	RPS Rix's Creek Pit Void Assessment. (22/6/2018)		
<b>Section 12 – Work Program for MR&amp;C (action plan)</b>				
Need to include a work program	Details provided in the MOP and shown diagrammatically and in context of time frame in the MOP Plans	MOP MOP Plans		DPE (RR-CO)

Yours faithfully



Dee Murdoch  
Associate Director  
dee.murdoch@aecom.com

Mobile: +61 408 489 689



Simon Murphy  
Principal Environmental Planner  
Simon.Murphy@aecom.com

Mobile: 0428 626 952  
Direct Dial: +61 2 4911 4977