



Mr Thomas Watt  
Senior Planning Officer  
Resource Assessments  
NSW Department of Planning and Environment  
GPO Box 39  
SYDNEY NSW 2001

Dear Mr Watt

**Mount Owen Continued Operations Project – Response to PAC Review**

Thank you for providing the Department of the Environment (the Department) with the opportunity to comment on Mount Owen Pty Limited's Response to PAC Review Report for the above project.

The Department notes that the proponent has included the Mitchell Hills Offset Site, comprising 83.1 ha of woodland dominated or co-dominated by key foraging tree species for the Swift Parrot (*Lathamus discolor*), in a revised Biodiversity Offset Strategy (BOS). With the inclusion of the Mitchell Hills Offset Site, the Department considers that the revised BOS meets the requirements of the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Biodiversity Offset Policy*.

In addition to comments provided on 14 September 2015 and 7 October 2015, if the project is approved the Department suggests incorporation of development consent conditions to provide for the long-term protection and habitat condition improvement of the proposed offset sites.

If you have any questions in relation to the Department's comments, please contact the project officer, Anu Datta by email to [anu.datta@environment.gov.au](mailto:anu.datta@environment.gov.au), or telephone 02 6274 1898 and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely

Dane Roberts  
Director  
NSW Assessments North  
Environment Standards Division

14 June 2016



OUT16/11626

Mr Matthew Sprott  
Resource Assessments  
NSW Department of Planning and Environment  
GPO Box 39  
SYDNEY NSW 2001

Matthew.Sprott@planning.nsw.gov.au

Dear Mr Sprott,

**Mount Owen Continued Operations Project (SSD 13\_5850)  
Planning Assessment Commission Request for DPI Water Advice**

I refer to your email dated 2 March 2016 to the Department of Primary Industries requesting DPI Water advice in respect to the above matter.

Comment by DPI Water

DPI Water has reviewed the Planning Assessment Commission's review report and provides the following advice on recommendation 16 of the report.

DPI Water notes the further response provided by the proponent in November 2015 addressing the concerns outlined by DPI Water following Response to Submissions. DPI Water accepts there may be reasons for some dams remaining in the final landform, including final land use and environmental purposes, however some of the assumptions related to how these dams will be appropriately accounted for or licensed require further consideration.

- The water accounting approach for dams in the final landform presented by the proponent only includes water use from the dam, including stock watering and evaporative water losses. DPI Water requires the total volume of dams to be accounted for, rather than just the stock watering and evaporative losses. DPI Water notes that the surface area of dams to remain is calculated by the proponent as approximately 47.8 hectares in total. It is likely that the total volume of the dams currently proposed to remain in the Jerry's Water Source will still exceed the 200ML of entitlement held and the proponent's harvestable right combined.
- In previous correspondence DPI Water requested that where the water captured by dams is intended to be accounted through harvestable rights, consideration should be given to the final ownership of the land to ensure the dams will be within the maximum harvestable right, or otherwise licensed or decommissioned. The proponent has not provided information to address

this. The proponent calculates their harvestable right based on their current total landholding of 4913 hectares and has not provided information on the likely ownership of land following rehabilitation of the mine, including any breaking up of land ownership as part of the proposed future land use and how this may impact on the legality of dams remaining in the landscape.

DPI Water notes that Mt Owen makes a general statement committing to remove any dams that cannot be appropriately licensed. The proponent also states that it is likely that many of the sediment dams included in the estimate will be removed as part of the mine closure process and development of a final landform sympathetic with the surrounding topography.

Further design of the final landform water management system should be included in Water Management Plans for consideration of DPI Water. This should include specific consideration of individual dams, their specific purpose, their capacity, and under what mechanism they are proposed to be accounted for.

For further information contact Brendan Mee, Water Regulation Officer, (Newcastle Office) on (02) 4904 2524 or at [brendan.mee@water.nsw.gov.au](mailto:brendan.mee@water.nsw.gov.au).

Yours sincerely



Mitchell Isaacs  
**Director, Planning Policy & Assessment Advice**  
07/03/2016



OUT16/24451

Mr Thomas Watt  
Resource Assessments  
NSW Department of Planning and Environment  
GPO Box 39  
SYDNEY NSW 2001

Thomas.watt@planning.nsw.gov.au

Dear Mr Thomas Watt

**Mount Owens Continued Operations Project (SSD 5850)  
Comment on the Response to Planning Assessment Commission Review Report**

I refer to your email dated 1 June 2016 to the Department of Primary Industries requesting comment on the above matter. Comment has been sought from relevant divisions of DPI. Any further referrals to DPI can be sent by email to [landuse.enquiries@dpi.nsw.gov.au](mailto:landuse.enquiries@dpi.nsw.gov.au).

DPI has reviewed the response and provides the following comments and recommendations:

- With reference to Figure 6.1 *Conceptual Final Landform Water Licensing and Accounting Framework*, DPI Water advises that stock and domestic dams built prior to 1 January 1999 and dams less than 1 Megalitre (ML) on a property approved for subdivision prior to 1 January 1999 must be included in calculations of Maximum Harvestable Right when calculating licensing requirements and additional storage construction. The proponent should clarify whether this has been accounted for in the licensing requirements as detailed in Table 2.7 in Appendix 6.
- Table 2.7 of Appendix 6 indicates that the proponent holds 450 ML in the Glennies Creek Water Source of the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources*. Review of water access licences (WALs) in this water source and discussions with the proponent have shown for this to be incorrect, and this information to have been based on an incorrectly converted WAL (WAL 17999) previously held by Glennies Creek Coal Management, which has recently been purchased by Glencore.
- DPI is unable to confirm the licensing requirements or ability within the Glennies Creek Water Source without further information and recommends the proponent arrange to meet with DPI Water (Newcastle office). DPI notes that there is limited potential for trade within this water source, and the Water Sharing Plan does not allow for any trading into this water source nor any change of category.
- It is noted that Table 2.7 of Appendix 6 indicates that 47 ML is required to be purchased from the Jerrys Water Source of the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Source*. DPI Water advises that there is likely sufficient market depth to

provide for this trade as there are 2097 shares of unregulated category entitlement in this water source across 19 licences.

- With respect to impacts to groundwater sources and groundwater dependent ecosystems DPI Water is satisfied with the proponent's response to the PAC's comments and recommendations.

The proponent should contact Graeme White, Manager Assessments to arrange a meeting. Mr White can be contacted on (02) 9934 0806 or [Graeme.White@dpi.nsw.gov.au](mailto:Graeme.White@dpi.nsw.gov.au).

Yours sincerely



Mitchell Isaacs

**Director, Planning Policy & Assessment Advice**

28 June 2016



OUT16/28201

Mr Thomas Watt  
A/ Team Leader  
Resource Assessments  
NSW Department of Planning & Environment

[thomas.watt@planning.nsw.gov.au](mailto:thomas.watt@planning.nsw.gov.au)

Dear Mr Watt

**Mount Owen Continued Operations Project (SSD 5850)  
Additional Comment on the Response to the Planning Assessment Commission  
Review Report**

I refer to supplementary information received by Department of Primary Industries regarding the Mount Owen Continued Operations Project, SSD 5850.

Comment by DPI Water

DPI Water has reviewed the information provided in the letter dated 12 July 2016 and the following attachments:

- Attachment 1 – Table A – Dams – Licensing Accounting for Final Landform
- Figure 1 – Mount Owen Continued Operations Project Conceptual Final Landform
- Figure 2 – Conceptual Final Landform Water Licensing Accounting Framework

In accordance with this review DPI Water provides the following advice.

Information indicating that significant entitlement was required from the Glennies Creek Unregulated Water Source was supplied in response to the Planning Assessment Commission's (PAC) review report. It is noted that it is sometimes appropriate for these issues to be addressed post approval however this was raised as an assessment issue as the licensable volume indicated of 330 ML/a is 72% of the licenced water in this source (Table 2.7 - response to the PAC review report – Appendix 6). This volume may be difficult to obtain from the market at a later stage and therefore is an important consideration in the assessment of the project.

The proponent has stated that advice was received verbally from DPI Water that in relation to legacy mining issues that the incremental increase of take from the final void after the commencement the Water Sharing Plan commencement being 1 August 2009 is what is required to be licensed. It is understood this principle is what has been applied in assessing volumetric licensing requirements from the Jerrys Water Source and the Glennies Water Source in the *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources*, in Table 1 of the supplementary information dated 12 July 2016.

DPI Water understands that for calculating the licensable take in Table 1 and Table 2 that the harvestable right contour was used to convert from hectares to mega litres. DPI Water advises that all water must be appropriately accounted for via a Water Access Licence unless subject to harvestable rights. The context surrounding the verbal advice received is unclear and an incremental approach to final landform water licensing is not consistent with the *Water Management Act 2000*.

As such it is recommended that the proponent liaise with DPI Water to discuss licensing of the final landform and also provide detail and spatial data to demonstrate the conclusions depicted in Table 1 which indicates that additional entitlement is also required from the Jerrys Water Source. It is recommended that this consultation occur prior to project determination to ensure that the impacts of the proposed final landform on the catchments are appropriately understood.

It is also noted that 15 ML is required from the Glennies Water Source of aquifer category. Currently 10 shares of this category are within the water source however it is noted that this is a conservative estimate and there are to be further model refinements.

It is noted that in the revised final landform that the Dams on the Forestry Corporation Land will be used for flood detention and not permanently hold water and therefore does not require a WAL.

DPI Water provided further clarification on WAL 17999 at the meeting held 5 July 2016. It is acknowledged that there was not clear communication regarding the cancellation of this Water Access Licence (WAL). However this WAL would not have been able to be used to account for surface water storages in the final landform as it was of aquifer category and this water source does not allow for change of WAL category from aquifer to unregulated.

It is noted that a commitment has been made to ensure that the final landform is consistent with proposed draft condition "The applicant shall ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of operations on site to match its available water supply." DPI Water supports this commitment. It is also reiterated that the Water Management Plan for the site must be updated in consultation with DPI Water.

For further information please contact Hannah Grogan, Water Regulation Officer Newcastle on (02) 4904 2516 or [hannah.grogan@dpi.nsw.gov.au](mailto:hannah.grogan@dpi.nsw.gov.au).

Yours sincerely



Graeme White  
**A/Director, Planning Policy & Assessment Advice**  
27 July 2016



OUT16/30478

Mr Thomas Watt  
Resource Assessments  
NSW Department of Planning and Environment  
GPO Box 39  
SYDNEY NSW 2001

Thomas.watt@planning.nsw.gov.au

Dear Mr Watt

**Additional Comment on the Response to the Planning Assessment Commission Review Report – Mount Owen Continued Operations Project (SSD 5850)**

The Department of Primary Industries- Water (DPI Water) has reviewed the additional information provided by the proponent dated 12 July 2016. A meeting was also held at the DPI Water office in Newcastle on 3 August 2016 where the proponent and the consultant presented information on how loss of catchment and take of water was calculated.

DPI Water is satisfied with the methodology used to calculate catchment loss and the estimated volume of water take in the proposed final landform (inclusive of voids). It is noted that this approach is consistent with the methodology used for other projects such as Drayton South.

The new information indicates that sufficient water entitlement may be obtained from the Glennies Water Source from the existing market share. The total loss from the Jerrys Water Source equates to 769 ML and we note that this will occur at cessation of mining and in the final landform.

DPI Water considers that all take in the final landform will require licensing. There is a total of 11,053 shares in the Jerrys Water Source with 3,343 of those shares being aquifer and unregulated category.

**Recommended Conditions:**

- The applicant should ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of operations on site to match its available water supply.
- The Water Management Plan for the site should be updated in consultation with DPI Water.
- The final landform should be designed in consultation with DPI Water and this design should consider impacts on Jerrys Creek and Glennies Creek catchments.
- The proponent should continue to consult with DPI Water regarding licensing requirements for the final landform.

Should you require further information please contact Hannah Grogan, Water Regulation Officer on 4904 2516.

Yours sincerely

Rebekah Gomez-Fort  
**A/Director, Planning Policy & Assessment Advice**  
16 August 2016





OUT16/27880

Mr Thomas Watt  
Senior Planning Officer  
Resource Assessments  
Department of Planning and Environment  
GPO Box 39  
SYDNEY NSW 2001

Email: [thomas.watt@planning.nsw.gov.au](mailto:thomas.watt@planning.nsw.gov.au)

Dear Mr Watt

**Mount Owen Continued Operations Project (SSD 5850)  
Glencore Response to Commission Review Report**

I refer to your email of 1 June 2016 requesting a review of the Glencore's (the Proponent) response to the Planning Assessment Commission's (PAC) Review Report for the Mount Owen Continued Operations project (the Project).

**Summary of Division Rehabilitation and Mine Closure Recommendations**

The Division has reviewed the *Mount Owen Continued Operations Project Response to PAC Review Report May 2016* prepared by Umwelt (Australia) Pty Limited, and *Mount Owen Continued Operations Project Response to Queries Raised by Agencies Following Response to Submissions November 2015* prepared by Umwelt (Australia) Pty Limited and responses to issues raised by the Division, it is recommended that conditions to be imposed on the Consent Conditions to ensure the following is addressed:

- 1) Inclusion of Preliminary Condition 21 "Independent Rehabilitation Audit" (if considered necessary : see note below)
- 2) Inclusion of Preliminary Condition 46 "Rehabilitation Objectives".
- 3) Inclusion of Preliminary Condition 48 "Progressive Rehabilitation".
- 4) Inclusion of Preliminary Condition 49 "Rehabilitation Management Plan", with the following amendment:  
c.49(g) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site consistent with Table 10, and triggering remedial action (if necessary);

## **DIVISION COMMENTS ON THE PAC REPORT RECOMMENDATIONS**

### **PAC Report Recommendation 10**

*That prior to determination, the Department clarifies the number of currently approved final voids and seeks further justification from the Applicant for any additional proposed final voids.*

The applicant has proposed a reduction in the number of final voids from three voids to two voids. The Division supports the reduction in the number of final voids as proposed by the Proponent as it results in an increase of beneficial land use on mine closure. The altered locations of final voids are to be included in revisions of the Rehabilitation Management Plan (RMP), also known as a Mining Operations Plan (MOP) under a Mining Lease.

### **PAC Report Recommendation 11**

*That, prior to determination, the Department seeks further information about alternative post-mining land use options, including the possibility of increasing woodland rehabilitation on slopes and focusing on agricultural species on the flatter areas of land to support grazing activities.*

The assessment of potential land uses has been revised with consideration of the new final landform. Woodland has been increased and the area for grazing reduced. The Division considers this is appropriate to ensure long-term land uses can be achieved. The changes in land use objectives are to be incorporated into revisions of the MOP.

### **PAC Report Recommendation 12**

*That, prior to determination, the Applicant provides a revised mine plan that:*

- *includes more detailed consideration of the potential minimisation of final voids, with particular reference to the large volumes of overburden material that would be moved over the life of the project;*
- *provides more detail about the final void shapes and how these are to be achieved;*
- *incorporates micro-relief, with a focus on ensuring that the final landform will be more sympathetic to the surrounding landscape; and*
- *includes a more refined composition of proposed vegetation within the rehabilitated areas in order to ensure a diversity of species and appropriate fauna habitat.*

Compared to the EIS, the proposed modifications result in one less void and a reduction of 12 ha of void catchment and 6 ha of pit lake area. The Division considers the reduction in void catchment and pit lake area compared to that proposed in the EIS as an improvement in mine closure outcomes.

### **PAC Report Recommendation 13**

*That the recommended preliminary conditions relating to the Rehabilitation Management Plan and/or Revision of Strategies, Plans and Programs are*

*strengthened to take into account the outcomes of any review of the NSW Government's current policy on final voids.*

The Division notes that any change to the mine design following approval by the Department of Planning and Environment (DP&E) would require a modification of the Project consent conditions. The MOP, regulated by the Division's Environment Sustainability Unit (ESU), reflects and adopts the DP&E approved mine design, conditions of consent and commitments made by the Proponent. Any changes to the mine design that reflects future development of NSW Government policy on final voids is to be reflected and adopted into an approved MOP.

#### **PAC Report Recommendation 14**

*That the recommended preliminary condition of consent relating to the Independent Environmental Audit should be linked to the preliminary Rehabilitation Management Plan condition to ensure that rehabilitation is independently monitored and audited on a regular basis.*

The Division notes that the Proponent agrees with this condition being imposed. It is further noted that the Minister for Resources and Energy has a similar power under s.246P the *Mining Act 1992* to impose a mandatory audit condition on mining leases at any time. Accordingly, the imposition of preliminary consent condition 21 on the Project Consent for a mandatory audit of the progress of rehabilitation may not be necessary, but if considered necessary in the consent, is supported.

The Division recommends that the preferred approach is to reserve the Independent Rehabilitation Audit power to operate in accordance with the *Mining Act 1992*, and then be imposed only as necessary should regular audits not be conducted voluntarily. The Mandatory Audit Condition may be imposed to ensure periodic or a singular audit as required and may be 'tailored' to the issues and circumstances as they arise at the time. Further this approach relieves the project operator of commitment to a costly audit on a regular basis, resulting in reduced compliance costs for those companies that demonstrate leading practice mine rehabilitation.

#### **PAC Report Recommendation 15**

*That the Department reviews intentions to mine existing rehabilitated land and considers options to ensure that proposed rehabilitated areas are not disturbed in the future, through conditions of consent or any other means.*

The Division recommends that where mining applications to re-disturb rehabilitated areas are proposed, each case be examined on its merits and where improved mine closure outcomes are expected, support the proposal. In assessing the benefits and costs of each proposal, changes to existing rehabilitated land may result in improved rehabilitation outcomes. For example, the reworking of former emplacement stockpiles to fill voids or for visually enhanced, sympathetic landform profiles containing micro relief and natural-like drainage lines.

## RECOMMENDED CONDITIONS OF APPROVAL

The Division recommends that the following conditions be incorporated into the Development Consent, if granted:

### Rehabilitation Objectives and Applicant Commitments

- 1) Inclusion of Preliminary Condition 21 "Independent Rehabilitation Audit" similar to the following form:

#### Mandatory Audit Action Condition

1. The authority holder must undertake, to the satisfaction of the Secretary, a mandatory audit to:
  - (a) provide information to demonstrate compliance or otherwise with rehabilitation progression and rehabilitation obligations under the authorisations and compliance or otherwise with the final land use outcomes imposed by the project's Planning Approval
  - (b) enable a determination of whether the authority holder is progressively rehabilitating the mine site to an acceptable standard.
2. The authority holder must undertake a mandatory audit by:
  - (a) appointing an auditor(s) certified to AS/NZS ISO 19011:2014 *Guidelines for auditing management systems*
  - (b) preparing an audit report in accordance with AS/NZS ISO 19011:2014 *Guidelines for auditing management systems*
  - (c) submitting the audit report to the Secretary on or before **[Date]**.
3. The audit must:
  - (a) Identify the areas and status of rehabilitation undertaken for each year of mine operation
  - (b) Include a plan prepared in accordance with the structure of the Series 3 Plans described in the Division's *ESG3: Mining Operations Plan (MOP) Guidelines, September 2013* including:
    - (i) The proposed final land use domains (e.g. grazing, biodiversity corridors etc.)
    - (ii) Surface contours at 5 metre contour intervals
    - (iii) Active mining areas
    - (iv) The Planning Approval boundary
    - (v) The mining lease boundaries
    - (vi) Areas that are excised from the mining lease
    - (vii) The status and age of rehabilitation areas and what phase they are up to in the rehabilitation program (e.g. decommissioning; landform establishment; growth medium development; ecosystem and land use establishment; and ecosystem and land use sustainability)
    - (viii) The location of any specific rehabilitation observations identified in the audit.

- (c) Determine whether rehabilitation, including final landform establishment, is being undertaken progressively and that the outcome of the rehabilitation is likely to comply with the final landform and land use objectives imposed by the project's Planning Approval;
  - (d) Determine the adequacy of any current rehabilitation monitoring and management programs that have been implemented to date (e.g. scope, frequency, number of monitoring locations and use of analogue sites) and whether the associated findings can demonstrate that progressive rehabilitation is on a trajectory to meeting the final landform and land use objectives as approved in the Planning Approval;
  - (e) Determine the effectiveness of rehabilitation care and maintenance programs in place to ensure that rehabilitation progress remains on a trajectory of meeting the final land use objectives in a timely manner;
  - (f) Determine any areas of failed rehabilitation or areas that, if left unmanaged, are likely to result in a delay in achieving rehabilitation obligations;
  - (g) Based on the findings of the audit, outline recommendations for rectifying any rehabilitation performance or non-compliance(s) identified.
  - (h)
- 2) Inclusion of Preliminary Condition 46 "Rehabilitation Objectives".
  - 3) Inclusion of Preliminary Condition 48 "Progressive Rehabilitation".
  - 4) Inclusion of Preliminary Condition 49 "Rehabilitation Management Plan", with the following amendment:
    1. c.49(g) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site consistent with Table 10, and triggering remedial action (if necessary);

### **Key Findings of the Proponents Response**

The Environmental Assessment (EA) and additional information has generally addressed the Division's Adequacy Review comments. The Division notes that the preliminary conditions of consent include the requirement to prepare a Rehabilitation Management Plan to the satisfaction of the Division.

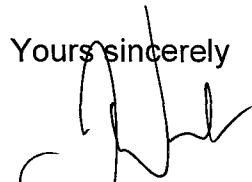
The recommended conditions of approval have been reviewed for consistency and standardisation with other project assessments and as exist on the current project being modified. The standard conditions of approval appear to have been adopted.

The PAC Report did not specifically address issues raised in the Division's submission.

The Proponent's response refers to the current Mount Owen Complex MOP, however the requirement to "*address all aspects of mine closure*" is deferred to the development of future mining operations plans and the development of a detailed Mine Closure Plan at least five years prior to the cessation of mining. This is acceptable provided the obligation for progressive rehabilitation is met in the interim and incorporated into the MOP(s).

Should you have any enquires regarding this matter please contact Steve Cozens, Senior Project Officer on (02) 9842 8573.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Zane West', written over the typed name.

**Zane West**  
**Manager, Royalties & Advisory Services**

## Matthew Sprott

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**From:** Michael Howat  
**Sent:** Monday, 7 March 2016 4:25 PM  
**To:** Matthew Sprott  
**Subject:** RE: Request for EPA Advice - Mount Owen Continued Operations Project (SSD 5850)

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Matthew,

In regards to your comments below seeking clarification of the EPA's position on the potential water management and water sharing/discharge scheme in place for the Mount Owen Complex sites, the EPA is aware of the Greater Ravensworth Water Sharing Scheme in place and notes that any water transferred from the Mount Owen Complex under that scheme becomes the responsibility of the premises accepting the water for storage/processing/use/disposal.

For example if Liddell Colliery (subject to EPL 2094) receives surplus water from Mount Owen through the GRWSS that water must then be managed by Liddell and managed/disposed of in accordance with all relevant approvals and licence conditions associated with that site.

If the proponent chooses to pursue a direct discharge point at the Mount Owen Complex then this will be assessed by the EPA once a formal application to vary the Environment Protection Licence (or licenses) is received.

Hope the above helps clarify our position.

Regards

### Michael Howat

Operations Officer - Hunter

NSW Environment Protection Authority

Ph: (02) 4908 6819 Mob: 0407 262 553

[michael.howat@epa.nsw.gov.au](mailto:michael.howat@epa.nsw.gov.au) [www.epa.nsw.gov.au](http://www.epa.nsw.gov.au) [@EPA\\_NSW](https://twitter.com/EPA_NSW)

Formal electronic correspondence to the EPA should be sent to [hunter.region@epa.nsw.gov.au](mailto:hunter.region@epa.nsw.gov.au)

**Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555**



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**From:** Matthew Sprott  
**Sent:** Wednesday, 2 March 2016 5:24 PM  
**To:** Karen Marler  
**Cc:** EPA RSD Hunter Region Mailbox; EPA Planning Matters Mailbox  
**Subject:** Request for EPA Advice - Mount Owen Continued Operations Project (SSD 5850)

Good afternoon Karen,

As you may be aware, the NSW Planning Assessment Commission (the Commission) published its review report on the Mount Owen Continued Operations Project on 17 February 2016.

The Commission's report included a total of 24 recommendations regarding the Department of Planning and Environment's (the Department's) preliminary environment assessment, which relate to biodiversity, air quality, final landform and rehabilitation, water, Aboriginal cultural heritage, socio-economics and the need for further public input. The Commission's report can be downloaded from the Department's website at: [http://majorprojects.planning.nsw.gov.au/index.pl?action=view\\_job&job\\_id=5850](http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=5850)

Throughout the assessment of this project, the Department has consulted with a number of agencies and received advice from the EPA on 6 March 2015 and 26 August 2015 (see attached). As part of its review report, the Commission has recommendation that the Department undertake further consultation with the EPA in relation to air quality and water issues.

Specifically, the Commission's seventh and sixteenth recommendations state, in part, that "The Department should forward a copy of the updated peer review of the AQIA to EPA ... and seek further comments in relation to the residual issues raised in their previous submissions." and "That, prior to determination, the Department seeks further comments from ... EPA about the discharge of surplus water from this project".

The Department would therefore appreciate the EPA's consideration of and response to the following two matters.

- 1) With regards to the air quality peer review, I have attached a copy of Todoroski Air Sciences' peer review (dated 20 November 2015) and Pacific Environment Limited's (ie Glencore's) initial response to this peer review (dated 14 December 2015).

In light of this additional information, DPE is seeking confirmation from the EPA as to whether the concerns it has raised to date have been adequately addressed and whether it has any residual concerns regarding the air quality aspects of the project.

FYI: Following its initial response to the November 2015 peer review, Glencore is in the process of providing some additional information (including data input files) for Todoroski Air Sciences' consideration in finalising its final peer review of the air quality aspects of the project. Once the final air quality peer review has been completed, DPE will seek the EPA's final feedback on air quality matters.

- 2) With regards to the discharge of surplus water from the project, I note that the project is expected to generate a net positive water balance in the later years of the mine life and that this water may be transported offsite under the Greater Ravensworth Water Sharing Scheme (GRWSS). I believe that the Commission is seeking recognition from the EPA that the project could result in water from the Mt Owen site being transported offsite and the EPA's express consideration of the acceptability of the potential for discharging this water from licensed discharge points at the Ravensworth or Liddell sites under the GRWSS. Your comments on these matters would be greatly appreciated.

The Department considers your advice in response to the Commission's recommendations to be critical in informing the Department's final assessment of the project. It is therefore requested that, as a matter of urgency, you consider the Commission's review report, focussing on the seventh and sixteenth recommendations, and provide further comments or feedback on the above matters (including any requirements concerning additional information to be provided by Glencore) to the Department by no later than COB Wednesday, 9 March 2016.

Please feel free to contact me if you have any queries regarding the above.

Regards,  
Matthew

**Matthew Sprott**

A/Team Leader | Resource Assessments  
Department of Planning & Environment  
23-33 Bridge Street SYDNEY 2000 | GPO Box 39 SYDNEY 2001  
ph: 02 9228 2054 | e: [matthew.sprott@planning.nsw.gov.au](mailto:matthew.sprott@planning.nsw.gov.au)





DOC16/268541-01; EF15/979

NSW Department of Planning and Environment  
GPO Box 39  
SYDNEY NSW 2001

Attention: Mr Thomas Watt

[thomas.watt@planning.nsw.gov.au](mailto:thomas.watt@planning.nsw.gov.au)

### **MOUNT OWEN CONTINUED OPERATIONS PROJECT – SSD 5850 PROPOSERS RESPONSE TO PAC REVIEW REPORT**

I refer to your email to the Environment Protection Authority (EPA), dated 1 June 2016, regarding Glencore's response to the Planning Assessment Commission (PAC) review report for the Mount Owen Continued Operations Project application, reference SSD 5850.

The proponents response report is titled '*Mount Owen Continued Operations Project – Response to PAC Review Report*' (response to PAC review), dated May 2016 and prepared by Umwelt (Australia) Pty Limited.

The EPA previously provided our comments in relation to the Environmental Assessment for this application, and subsequent comments dated 28 August 2015 to the proponents Response to Submissions report.

The response to PAC review report details alterations to the original proposal, with the key amendments being the applicant no longer proposes coal mining in the Ravensworth East Resource Recovery (RERR) mining area, instead undertaking rehabilitation of the area, and changes to the Bayswater North Pit and the North Pit final void landforms.

The EPA has reviewed the information provided in the response to PAC review report in relation to our previous comments regarding potential air quality, noise, and surface water matters.

#### Noise

Based on the information provided the changes proposed in the Glencore response to the PAC review are not predicted to significantly affect the potential noise impacts of the project. The mitigation and management measures previously proposed for the project have not changed.

The removal of proposed mining in the RERR area is expected to result in some noise predictions for year 10 of the project being reduced by 1 dBA from the previous predictions.

Noise levels predicted for winter evenings and night times have not changed, as mining was not proposed in the RERR area during adverse weather conditions in winter night times.

The proponent has adopted new project specific noise levels which were suggested by the Department of Planning and Environment (DPE). The number of residential sensitive receivers expected to receive operational noise from the project above project specific noise levels has reduced by two, from 21 to 19.

#### Air Quality

The EPA has reviewed the response to the PAC review and the information provided in Appendix 2 of the response to PAC review, which is the report titled '*Mount Owen Continued Operations – Refined Project*', dated 26 May 2016 and prepared by Pacific Environment Limited.

The response to the PAC review resolves the outstanding matters regarding the assessment of impacts to the air environment from the proposal. In response to the revised information the EPA provides recommended conditions of approval in **Attachment A** in relation to air quality matters.

The EPA notes that DPE provided draft recommended conditions of approval, as Appendix G to the Project Assessment Report, dated November 2015, which was provided to the PAC. Condition 19(a) of Schedule 3 requires the proponent to "*implement all reasonable and feasible measures to minimise the off-site odour, fume, spontaneous combustion and dust emissions of the development*".

Condition 2 of Attachment A of this letter is similar in content to that draft condition however specifically refers to PM<sub>10</sub> and PM<sub>2.5</sub>. The EPA believes that condition 19(a) of Schedule 3 of the draft recommended conditions of approval should include a specific reference to PM<sub>10</sub> and PM<sub>2.5</sub>.

#### Surface Water

The EPA previously noted that with the removal of the licensed discharge point at the Mount Owen Coal Mine in November 2014, any direct discharge from the premises to surface waters would require a licence variation application and subsequent assessment.

As detailed in the response to the PAC review the proposed water sharing arrangement will be operated in accordance with the Greater Ravensworth Water Sharing Scheme (GRWSS) currently in place. The EPA understands the proposal does not involve the direct discharge to surface water from the Mount Owen complex and that any surplus water will be managed through the GRWSS and is not predicted to result in any alteration to the existing regulatory arrangements in relation to the GRWSS.

The EPA considers the matter of potential surface water discharges has been adequately addressed in the proponent's response to the PAC review.

If you require any further information regarding this matter please contact Michael Howat on 4908 6819.

Yours sincerely



**MICHAEL HOWAT**  
**Acting Head Regional Operations Unit - Hunter**

Contact officer: MICHAEL HOWAT  
(02) 4908 6819  
hunter.region@epa.nsw.gov.au

Encl: **Attachment A – Recommended Conditions of Approval**

**ATTACHMENT A**

**RECOMMENDED CONDITIONS OF APPROVAL  
MOUNT OWEN CONTINUED OPERATIONS PROJECT (SSD 5850)**

**Air Quality**

1. Emissions from Diesel engines

The proponent shall estimate emissions of  $PM_{2.5}$  from all diesel engines used for the project.

2. Minimise emission of particulate matter

The proponent shall take all reasonable and feasible measures to minimise the emission of  $PM_{10}$  and  $PM_{2.5}$  from the project. Measures should include both proactive and reactive management, for all emission sources (crustal and combustion) to ensure that impacts from the project are minimised to the maximum extent achievable.



DOC16/102260-2  
SSD 5850

Mr Oliver Holm  
Executive Director, Resource Assessments and Compliance  
Department of Planning & Environment  
GPO Box 39  
SYDNEY NSW 2001

Dear Mr Holm

**RE: Mount Owen Continued Operations Project (SSD 5850)**

I refer to your letter dated 18 February 2016 in which you made reference to the Review Report for the Mount Owen Continued Operations Project that has been prepared by the Planning Assessment Commission (PAC). As requested, this letter addresses Recommendation 2 in the Review Report, in relation to any likely impacts of the proposed expansion of North Pit on vegetation corridors, and the PAC's request for clarity regarding effectiveness of these corridors for fauna movement. The Office of Environment and Heritage (OEH) understands that this information is required for the determining authority for this project, in this case the PAC.

**Likely impact of the expansion of North Pit in relation to proposed vegetation corridors**

The north-south wooded corridor on the eastern flank of the Mount Owen project area links Ravensworth State Forest with forest and woodland to the north, and to more fragmented wooded remnants and revegetation to the south (to Glennies Creek) and to the south west (towards the Narama West Open Pit and the Hunter River). The corridor includes areas of revegetation and regeneration of differing ages that is largely linked to earlier consents for Mount Owen coal mine.

The proposal includes plans to bolster vegetated corridors around the project area through a combination of active and passive revegetation at the Cross Creek offset, the Stringybark Habitat Corridor, the Betty's Creek Habitat Management Area, and the inclusion of wooded corridors in the rehabilitation of post-mined areas within and west of North Pit.

The expansion of North Pit by about 381 hectares to the south of its current extent would result in the clearing of about 217 hectares of mapped native woody vegetation comprising of five vegetation communities (see Table 1).

The remaining 164 hectares of the North Pit expansion footprint comprises derived native grasslands of the local woody vegetation communities in Table 1, and about one hectare of water bodies (mostly farm dams) (Umwelt (Australia) Pty Ltd (2014)). The loss of vegetation in the North Pit development footprint would reduce the width of the wooded corridor from about 1.2 kilometres to 600 metres around

the southern part of the Betty's Creek Diversion, and would remove the main area of remnant Dry Sclerophyll Forest and Woodland on the western side of Main Creek in the area south of North Pit.

Table 1. Summary of woody vegetation in the North Pit expansion area (based on Umwelt (2014))

Woody vegetation community	Approximate area (ha)
Central Hunter Ironbark – Spotted Gum – Grey Box Forest EEC	131.9
Central Hunter Bulloak Forest Regeneration	52
Planted Ironbark – Spotted Gum – Grey Box Forest	27.4
Central Hunter Swamp Oak Forest	1
<i>Kunzea ericoides</i> Closed Shrubland	4.7
<b>TOTAL</b>	<b>217</b>

The native woodland in and around the Mount Owen project area contains habitat that supports a number of threatened fauna species including the squirrel glider, koala, spotted-tailed quoll, and the green and golden bell frog. As identified in the Review Report, the part of the Hunter Valley where the project occurs does not include core koala habitat due to the limited extent and abundance of key food trees. Suitable connectivity habitat for the green and golden bell frog includes wet areas such as river banks and wetlands, drainage lines, periodically damp areas and grassy open areas (DECC, 2008). The ability of squirrel gliders to cross gaps between wooded patches and isolated trees depends upon the height from which the glide starts, with glides of about 20 metres possible from a starting height around 13 metres, and about 43 metres from a height of about 25 metres (Goldingay and Taylor, 2009). Spotted-tailed quolls have been recorded from a number of different habitats in the local area, including in cleared agricultural areas. However, they do appear to be using drainage lines as the main movement corridors in more open areas, particularly where there are also key habitat elements, such as log piles that may be used as den sites (Umwelt, 2013a).

The reduction in width of the corridor and the loss in habitat features found in those areas is likely to impact on local threatened fauna that may use them. However, the extent of impact in relation to movement and habitat of individual species is difficult to quantify.

In order to more completely consider the impact of clearing on the integrity of the north-south corridor to the east of North Pit, OEH suggests that clarification is sought on the following points:

- the suitability of the proposed corridor/patches for selected fauna species
- vegetation structure and composition of remnant, regenerating and recreated woody vegetation within the corridor
- the location and abundance of habitat features within the corridor (piles of logs, hollow-bearing trees, riparian corridors) and opportunities to source them from the development areas
- how clearing and revegetation can be staged to maximise the width of the corridor at all times (e.g. early commencement of revegetation in narrowest parts of the corridor, and delayed clearing in parts of the development footprint)
- confirmation on whether the upper reaches of the Betty's Creek diversion that are in the development footprint will need to be reinstated, and if so how much clearing in the corridor may be required?

OEH supports the PAC's suggestion of having a targeted strategy with more prescriptive performance indicators and milestones in any consent issued. This approach would better enable progress of revegetation and rehabilitation to be measured in relation to agreed outcomes. It would be useful to review such targets and milestone against the data and analysis in the report by Umwelt (2013).

If you require any further information regarding this matter please contact Robert Gibson, Regional Biodiversity Conservation Officer, on 4927 3154 or by email at [robert.gibson@environment.nsw.gov.au](mailto:robert.gibson@environment.nsw.gov.au).

Yours sincerely

*Monica . 8/3/16*

**MONICA COLLINS**  
**Director, North Branch**  
**Regional Operations**

**References:**

DECC (2008) *Best practice guidelines: Green and golden bell frog habitat. November 2008.* NSW Department of Environment and Climate Change Sydney  
[www.environment.nsw.gov.au/resources/threatenedspecies/08510tsdsgreengoldbfbpg.pdf](http://www.environment.nsw.gov.au/resources/threatenedspecies/08510tsdsgreengoldbfbpg.pdf)

Goldingay, R.L. and Taylor, B.D. (2009) Gliding performance and its relevance to gap crossing by the squirrel glider (*Petaurus norfocensis*). *Australian Journal of Zoology* **57**: 99-104.

Umwelt (2013a) *Ecological Assessment: Liddell Coal Operations Extension Project. September 2013* Umwelt (Australia) Pty Limited, Teralba.  
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Umwelt (2013b) *Assessment of the Ecological Outcomes of Mine Rehabilitation, Regeneration and Revegetation at Mount Owen. Report prepared for Glencore Coal Assets and Mount Owen Mine.* Umwelt (Australia) Pty Limited, Teralba.

Umwelt (2014) *Ecological Assessment: Mount Owen Continued Operations Project. Final. October 2014.* Umwelt (Australia) Pty Limited, Teralba  
[http://majorprojects.planning.nsw.gov.au/index.pl?action=view\\_job&job\\_id=5850](http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=5850)





DOC16/269696-1  
SSD 5850

Mr Thomas Watt  
Senior Planning Officer, Resource Assessments  
Department of Planning and Environment  
thomas.watt@planning.nsw.gov.au

Dear Mr Watt


**RE: MOUNT OWEN CONTINUED OPERATIONS PROJECT (SSD 5850) - GLENCORE RESPONSE TO THE PLANNING ASSESSMENT COMMISSION REVIEW REPORT**

I refer to your e-mail dated 1 June 2016 seeking comment from the Office of Environment and Heritage (OEH) in response to the Glencore comments to the Planning Assessment Commission's (PAC) report on the Mount Owen Continued Operations Project. OEH has reviewed the Glencore response to the PAC report and recommended conditions, and also OEH's previous correspondence on this project in 2015.

In summary, OEH is of the opinion that improving riparian vegetation along the lower reaches of Stringybark Creek (on land owned by Glencore) is of value for fauna movement on the valley floor, in particular for the Spotted-tailed Quoll. This may be more effective than the proposed 'East-West Corridor Management Area'. OEH agrees with the value of monitoring of revegetation and regeneration over a long timeframe to both measure how vegetation is tracking and allow for adaptive management. Further detailed comments are provided in **Attachment 1**.

If you have any enquiries concerning this advice, please contact Robert Gibson, Regional Biodiversity Conservation Officer, on 4927 3154.

Yours sincerely



17 JUN 2016

**RICHARD BATH**  
Senior Team Leader Planning, Hunter Central Coast  
Regional Operations

Enclosure: Attachment 1



## **ATTACHMENT 1: OEH COMMENTS ON THE GLENCORE RESPONSE TO PLANNING ASSESSMENT COMMISSION REVIEW REPORT: MOUNT OWEN CONTINUED OPERATIONS PROJECT (SSD 5850)**

OEH notes that the Planning Assessment Commission (PAC) Report for the Mount Owen Continued Operations Project was finalised on February 2016 and contained 24 recommendations. Nine recommendations are within OEH's area of responsibility: biodiversity (6), final landform and rehabilitation (2), and Aboriginal cultural heritage (1).

### **BIODIVERSITY**

The PAC report presented six biodiversity recommendations to the Department prior to any consent being issued for this project. The proponent's responses (Umwelt, 2016) to the recommendations for biodiversity are found in Sections 4.2 and 5.3.1 and Appendices 3, 4 and 5 of its report.

Following are OEH's detailed comments on the Glencore response report to the six biodiversity recommendations:

#### **1. East-West Vegetation Corridor along Stringybark Creek**

OEH notes that Glencore (p. 37) does not propose any additional restoration works of riparian habitat along Stringybark Creek between the Stringybark Creek Offset for the project and the planned restoration works along Bowmans Creek on the Liddell Mine site. Instead, Glencore has proposed the establishment of the 'East-West Corridor Management Area' which is located between the Mount Owen site offices and Yorks Creek on the northern side of the main entrance to the Mount Owen mine (p. 37, Figure 4.3). This Management Area contains scattered trees and shrubs and isolated woody patches and only a small area of riparian habitat (Yorks Creek). It is intended as a provisional means of protecting potential habitat and corridor areas used by Spotted-tailed Quolls and the habitat of that area would be maintained while opportunities to better connect Stringybark Creek to Bowmans Creek are investigated. While this management area will maintain beneficial habitat for at least the short term, it appears to be of limited use for Spotted-tailed Quolls which have been found to travel mainly down local creeks that arise from wooded hills immediately north of the Mount Owen Mine.

The proponent has offered an additional offset parcel, the Mitchell Hills Offset, which is about 10 kilometres northwest of the Mount Owen Mine. This offset was selected for its remnant woodland and forest with the Swift Parrot and Australian Government Department of the Environment comments in mind. This offset likely also contains habitat for the Spotted-tailed Quoll and forms part of a movement corridor for this species adjacent to the valley floor.

If this project is approved the upper half of Stringybark Creek will be included in offset lands for the Mount Owen Mine. Presently the lower stretch of the creek flows through cleared land before joining Bowmans Creek and does not appear to be managed to enhance riparian vegetation. In its current state Stringybark Creek serves as a movement corridor for the Spotted-tailed Quoll. However, with on-going and increasing revegetation activities in its upper reaches and hinterland, and similar works happening and proposed along Bowmans Creek for the Liddell Mine, the three kilometre stretch of Stringybark Creek that flows across four lots that are outside of any current or proposed offset is becoming a pinch point for movement between the Mount Owen and Liddell Mine sites. The current land ownership of those four lots is shown on Figure 1.2 of Glencore's response. This shows that Glencore owns two of those lots, while the other two lots are Crown Land.

OEH acknowledges that Glencore has offered a large offset package for the proposed project, which has grown in size in the response to the PAC report. OEH suggests that the proponent consider fencing the sections of Stringybark Creek on the two lots that it owns (Lot 96 DP 752470 and Lot 355 DP 867083), or otherwise facilitate passive regeneration of the riparian vegetation on those parcels while they continue to investigate ownership and mining constraints on the other two land parcels. A small investment of resources on Lots 96 and 355 would help reduce the pinch point between areas of active and effective revegetation and regeneration which would enhance the movement of Spotted-tailed

Quolls on the Hunter Valley floor. OEH suggests that these actions on Lot 96 and 355 should be undertaken in preference to the proposed 'East-West Corridor Management Area', or are undertaken as a conservation measure for any future consent issued for a Glencore mining project in the Hunter Valley.

2. Expanding North Pit and the reduction in the North-South corridor to its east

The proponent has provided additional information on the impact of mining on reduction in width of the vegetated corridor on the eastern side of North Pit. Further, Glencore has offered to increase the width of planned revegetation on the eastern edge of this woodland and replanted corridor, notably beside parts of the Southeast Offsets and the Southeast Corridor Offsets where the wooded corridor is at its narrowest. This would be further reduced in width by the expansion of North Pit. OEH notes that most of the land disturbance associated with the project, if approved, occurs in the first five years (Figures 4.3 & 4.4, Table 4.3) when any newly planted trees and shrubs in the new revegetation areas would still be small. However, given the range of local threatened fauna that would currently use corridor, OEH considers that the reduced width of the corridor at the start of the project is unlikely to contribute to the extinction of any local populations. OEH supports the proposed additional area of revegetation on the east side of this corridor, and that the revegetation works would be prioritised to commence in the first year of this project.

3. That any issued consent includes the requirement of further research into regeneration activities for this project, corridor linkages within the project area and corridor linkages between the Mount Owen Mine and adjacent mine areas.

The Proponent has facilitated on-going research on their revegetation and rehabilitation by staff and students from the University of Newcastle and CSER Research, and they present a summary of that research in Appendix 3 of the Report. OEH appreciates that the proponent has limited control over when work from this research will be written up and published. The Report would have been improved by the inclusion of a copy of, or a summary of the report titled '*Assessment of the Ecological Outcomes of Mine Rehabilitation, Regeneration and Revegetation at Mount Owen*' by Umwelt (2013) which deals directly with many of the key issues in relation to the nature, issues, timeframes, successes and challenges of rehabilitation of a post-mined landscape in the Hunter Valley. It is advantageous for the great work done at Mount Owen to be able to better inform revegetation at other mine sites in the Hunter Valley so that it can all be undertaken more effectively. Further, the release of the results of rehabilitation and revegetation through peer-reviewed papers and reports would help educate the broader community to help make this part of mine land management more transparent and foster greater appreciation of the work done to date.

OEH is aware of monitoring programs of the Spotted-tailed Quoll at the Mount Owen and Liddell Mine sites. These projects are yielding excellent new information on the movement of this species. Any coordination of such projects between adjacent mine sites would be beneficial, as well as general monitoring of which threatened species use corridors. These may be considered in any future consents for new mining projects.

As a general comment, OEH notes that Appendix 4 of the report contains summaries of local woody vegetation communities around the project area that have come from Peake (2006). OEH notes that most of the details come from Peake (2006) rather than from more recent fieldwork undertaken in and adjacent to the Mount Owen site. This section could have been improved if it was based more on the results of local survey work done on or adjacent to the Mount Owen site to highlight local variation in local vegetation communities.

4. That any issued consent ensures that the regeneration on the mine site is independently monitored and audited on a regular basis.

OEH agrees with this recommendation, and note that the proponent does as well.

5. Proposed changes to the Biodiversity Management Plan: (a) salvaging, translocating or propagating and planting threatened plants; (b) impacts and monitoring of Groundwater Dependent Ecosystems; (c) that more specific performance measures are set in relation to local threatened fauna; (d) that more details are provided on specific methods for regeneration, as well as relevant performance measures; and (e), that further details were provided on the different 'functional groups' in the local vegetation that may be used in regeneration.

- (a) OEH agrees with the proponent's assessment in relation to the unlikelihood that the project would directly impact any of the six local threatened plants species in the study area (Slaty Gum (*Eucalyptus glaucina*, *Ozothamnus tessellatus*, *Pterostylis chaetophora*, Tiger Orchid (*Cymbidium canaliculatum*) endangered population, Weeping Myall (*Acacia pendula*) endangered population, and River Red Gum (*Eucalyptus camaldulensis*) endangered population)). Thus it is unlikely that any plants of those species would require salvage and translocation or propagation for this project.
- (b) OEH notes that there are predicted changes to local Groundwater dependent ecosystems which would result in vegetation changes to dryland vegetation community's overtime. If this affected threatened species, populations or communities then those impacts would require offsetting in accordance with NSW biodiversity offsetting policy.
- (c) OEH agrees with the proposal by the PAC and most of the Proponent's response. OEH's only additional comments are that OEH supports monitoring of the species that use the nest boxes, and that plans are made for the upgrade or replacement of nest boxes as they age (they are not as durable as tree hollows).
- (d) The proponent provided more details on methods for regeneration and performance measures in section 5.3.1. of the report. In general what they have described in relation to plant community succession is general and well-known. OEH endorses the proposed on-going monitoring and Trigger Action Response Plan (TARP) which will alert managers to unexpected deviation from expected successional pathways (Report, p. 97) and thereby allow for adaptive management, if and when required to increase the likelihood of achieving required outcomes.

OEH acknowledges that new planting on an intact soil profile, with residual soil biota, soil seed bank, and existing nutrient recycling system is different to starting on moulded and variably ameliorated mine spoil. Thus in the a cleared area in an otherwise intact woody vegetation community in the Hunter Valley the early stages of succession would likely include moss and lichens; ferns, such as species of *Cheilanthes* and a variable combination of annual daisies (e.g. *Rhodanthe* sp.), tussock grasses (such as species of *Aristida*, *Eragrostis* or *Entolasia*), low-growing perennial daisies (e.g. *Vittadinia* sp., *Vernonia cinerea*), pioneering shrubs in the Fabaceae: Faboideae (e.g. *Daviesia ulicifolia*), Fabaceae; Mimosoideae (*Acacia* sp.), and in other plant families (such as Hop Bush (*Dodonaea* sp.), *Cassinia* sp., *Olearia* sp., *Exocarpos* sp. and *Bursaria spinosa*), and vines such as *Hardenbergia violacea*. In the case of post-mined land revegetation it is likely that representatives of many of these groups of plants would need to be physically added, and that some management actions may be required where aggressive weeds (particularly *Galenia pubescens*, Rhodes Grass (*Chloris gayana*) and Kikuyu (*Pennisetum clandestinum*) are present.

- (e) Appendix 5 of the report includes details of the functional roles and groups to which plant species in Central Hunter ironbark – Spotted Gum – Grey Box Forest in Ravensworth State Forest belong. This is an excellent summary which helps identify which local species may be used for which general roles in the landscape and that species that may contribute more to resilience of that vegetation community, measured by such things as resistance to weed invasion (e.g. Pokorny et al., 2005) and in which circumstances planted indigenous species may compete with each other (e.g. Kimball et al., 2014). Application of these concepts are relatively new in the Hunter Valley, and many aspects of local plant ecology, longevity and reproduction are poorly known. However, as this knowledge base improves it will become more useful in generating an appreciation of which suites of plants, in which environmental settings will have the best chance of achieving revegetation and regeneration outcomes.

Something for future consents to consider is the inclusion of measuring and monitoring the number of native plants in each functional role and group in quadrats or transects in regeneration and revegetation areas. This would require targeted numbers for each plant functional group to be set for each Plant Community Type. This type of monitoring has been considered before, such as in draft '*Hunter Valley Coal mines: Best Practice Guidelines for Biodiversity Offset Management Plans*' prepared by the Department. This approach offers the advantage of targets for each plant functional role or group to be measured for the Annual Monitoring project and to provide a clear indication of how each area is tracking against the target and thus where further actions may be required.

#### 6. Make-up of the Community Consultative Committee

OEH agrees with the recommendation and the Proponent's response.

#### **Other biodiversity issues.**

The PAC raised the issue of planned regeneration and revegetation to create many wooded areas in the offset package for this project. As discussed in OEH's 2015 advice, the main areas of uncertainty come from revegetating a post-mined landscape. Regeneration of cleared land with an intact soil profile, and soil seed bank of indigenous species retain some resilience and thus retain the ability to more easily produce at least a modified version of the previous woody plant community.

OEH supports the monitoring of the success of revegetation and rehabilitation for this project and the setting of targets relating to 5, 10, 15 and 20 years (p. 54 of the Response Report) for areas where regeneration is proposed. The Response Report (p. 64) indicates that it has taken 50 odd years for vegetation to regenerate into a community that conforms to the description of the Hunter Central ironbark Spotted Gum Grey Box Forest Endangered Ecological Community (EEC) under the *Threatened Species Conservation Act 1995*. They state further that similar recovery can be expected in other cleared areas with the removal of grazing and management of invasive weeds. The regeneration of ECC will therefore take time and likely much longer than the 20 years.

### **FINAL LANDFORM AND REHABILITATION**

Of the six recommendations proposed by the PAC in relation to the proposed final landform and rehabilitation, two are within OEH's area of responsibility. OEH comments on the Glencore response report to these recommendations are:

12. That the applicant provides a revised mine plan that covers minimisation of final voids, the creation of a more sympathetic post-mine landform; and the species composition of the proposed rehabilitation;

OEH supports the creation of more sympathetic post-mine rehabilitation and revegetation on development sites. Suggested means for this have been raised in comments on biodiversity (above).

15. That DP&E consider ways in which existing rehabilitation for other projects may be protected from future development.

OEH agrees that it is preferable for rehabilitation and revegetation associated with mining projects to be protected from further clearing. However, as highlighted by the Proponent, mechanisms exist under current NSW Biodiversity Offset policy for rehabilitation and revegetation to be cleared, and its biological values to be offset elsewhere.

## ABORIGINAL CULTURAL HERITAGE

19. The PAC recommended that prior to any determination that DP&E consider the findings and any potential implications of the recent court case, *LALC v Minister for Planning Infrastructure and Anor* [<https://www.caselaw.nsw.gov.au/decision/564a9ec2e4b003c5681fabbe>] in relation to the Calga Sand Mine in relation to the adequacy of the cultural heritage assessment for this project.

OEH agrees with the proponent's response to this recommendation. OEH does not believe that the factors from the Calga Quarry decision are at play for the Mount Owen Continued Operations Project given the nature of the archaeological record at this site.

### References

Kimball, S.; Lulow, M.E.; Mooney, K.A.; and Sorenson, Q.M. (2014) Establishment and management of Native Functional Groups in Restoration. *Restoration Ecology* **22**: 81-88

Peake, T.C. (2006) *The Vegetation of the Central Hunter Valley, New South Wales. A Report on the Findings of the Hunter Remnant Vegetation Project*. Hunter – Central Rivers Catchment management Authority, Paterson.

Pokorny, M.I.; Sheley, R.L.; Zabinski, C.A.; Engel, R.E.; Svejcar, T.J. and Borkowski, J.J. (2005) Plant Functional Group Diversity as a Mechanism for Invasion Resistance. *Restoration Ecology* **13**: 448-459

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Umwelt (2013) *Assessment of the Ecological Outcomes of Mine Rehabilitation, Regeneration and Revegetation at Mount Owen*, prepared for Glencore Assets Australia and Mount Owen Pty Ltd. December 2013. Umwelt (Australia) Pty Limited, Teralba.

OEH 17 JUNE 2016

28 June 2016

Mr Thomas Watt  
Senior Planning Officer  
Resource Assessments  
NSW Department of Planning & Environment  
GPO Box 39  
Sydney NSW 2001

Dear Mr Watt

**SSD 5850 - MOUNT OWEN CONTINUED OPERATIONS PROJECT (SSD 5850): GLENCORE RESPONSE TO COMMISSION REVIEW REPORT**

I refer to your email of 1 June 2016 inviting Hunter New England Health (HNEH) to review and provide comment on the response by Glencore to the Planning Assessment Commission's Review Report for the Mount Owen Continued Operations Project.

The above documents and the April 2016 Air Quality peer review document have been reviewed with particular attention being paid to issues HNEH raised in relation to air quality, which may have an impact on public health.

**Air Quality**

In our previous correspondence we expressed our concern that the environmental assessment used the current annual PM<sub>10</sub> goal of 30 µg/m<sup>3</sup> given the national air standards that would prevail during the operation of the mine were under review. The proponent's response to this concern was that air quality was assessed against current standards and not against the future standards to be implemented during the lifetime of the mine.

Since then, on 15 December 2015, the National Environment Protection Council (NEPC) agreed to vary the National Environment Protection (Ambient Air Quality) Measure (NEPM). The amending instrument took effect on 4 February 2016. The new standards are as follows:

Pollutant	Averaging Period	Maximum concentration standard	Maximum allowable exceedances
Particles as PM <sub>10</sub>	1 day	50 µg/m <sup>3</sup>	None
	1 year	25 µg/m <sup>3</sup>	None
Particles as PM <sub>2.5</sub>	1 day	25 µg/m <sup>3</sup>	None
	1 year	8 µg/m <sup>3</sup>	None

Reference: <https://www.legislation.gov.au/Details/F2016C00215>

Hunter New England Local Health District  
ABN 63 598 010 203

Hunter New England Population Health  
Locked Bag 10  
Wallsend NSW 2287  
Phone (02) 4924 6477 Fax (02) 4924 6490  
Email HNELHD-PHEquiries@hnehealth.nsw.gov.au  
[www.hnehealth.nsw.gov.au/hnep](http://www.hnehealth.nsw.gov.au/hnep)

2

Mr Thomas Watt  
28 June 2016

It is clear within the Air Quality peer review document and the prior environmental impact statement that many private residences will be exposed to particulate levels that exceed the levels in the current air quality standards for particulates.

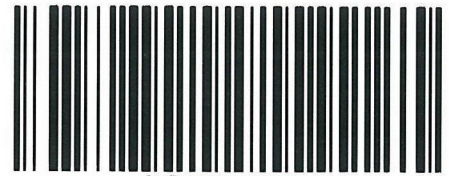
Should you require any additional information in relation to the above, please telephone Ms Carolyn Herlihy, Environmental Health Officer on (02) 4924 6477.

Yours sincerely

A handwritten signature in black ink, consisting of a large, stylized initial 'C' followed by a horizontal line extending to the right.

Dr Craig Dalton  
Acting Service Director - Health Protection

document2



PCU065670

7<sup>th</sup> June, 2016

Thomas Watt  
Senior Planning Officer  
NSW Dept of Planning & Environment  
GPO Box 39  
SYDNEY NSW 2001

Our ref: 10.121.046

Your ref: SSD5850

Dear Thomas,

**Re: Mount Owen Continued Operations Project SDD 5850:**  
**Glencore response to Commission review report**

The DSC has reviewed the Planning Assessment Commission's review report on the Mount Owen Continued Operations Project (SSD 5850), as requested in your email of 1/06/2016.

The project application area impacts the Mount Owen North and Mount Owen Notification Areas which surround the Mount Owen North Void Tailings Dam, and Mount Owen Rail Loop Tailings Dams respectively. The Mount Owen North Void Tailings Dam and Mount Owen Rail Loop Tailings Dam are prescribed dams of significant consequence category in the event of dam failure.

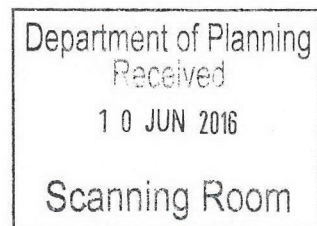
Proposed mining undertaken as part of the Mt Owen Continuation Project within the Notification Areas will need to be endorsed by the DSC and the Company will need to apply to the DSC to this end.

Should it be identified that endorsement by the DSC to mine within the Notification Areas is required, no complications are foreseen as the DSC has no objection to the proposed mining at Mount Owen.

If you have any further queries please do not hesitate to contact me on 9842 8076.

Yours Sincerely

Bill Ziegler  
**Manager Mining Projects**  
**Dams Safety Committee**



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5 August 2016

SF2015/006050  
CR2016/002908  
TR

Resource Assessments  
NSW Department of Planning and Environment  
GPO Box 39  
SYDNEY NSW 2001

Attention: Thomas Watt

**NEW ENGLAND HIGHWAY (A15): MOUNT OWEN CONTINUED OPERATIONS PROJECT,  
RAVENSWORTH – EXHIBITION OF ENVIRONMENTAL IMPACT STATEMENT– SSD 5850**

I refer to your email dated 1 June 2016 regarding the Planning Assessment Commission (the Commission) review of the Mount Owen Continued Operations Project (SSD 5850). Glencore has responded to the Commission's review report dated February 2016 and the Department of Planning and Environment have requested Roads and Maritime's response to Glencore's PAC review report. I apologise for the delay in responding.

Roads and Maritime understands that the Commission's review recommendations were in regards to issues including Biodiversity, Air Quality, Land Reform and Rehabilitation, Water, Aboriginal Cultural Heritage and Socio-Economic

The Commission's review report did not raise any issues regarding traffic or the impact of the project on the classified road network.


#### Roads and Maritime Response

Roads and Maritime has reviewed the Commission's review report and Glencore's response and has no additional comments in regards to the project, as the issues raised by the Commission do not impact on the classified (State) road network.

On the Minister's determination of this matter, it would be appreciated if a copy of the Project Approval is forwarded to Roads and Maritime for our records.

If you require further advice please contact Hunter Land Use on (02) 4924 0688 or [development.hunter@rms.nsw.gov.au](mailto:development.hunter@rms.nsw.gov.au)

Regards

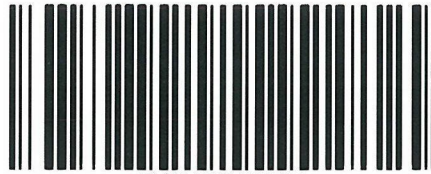
A handwritten signature in black ink, appearing to read 'David Collaguazo', with a stylized, cursive script.

David Collaguazo  
A/Manager Land Use Assessment  
Hunter Region

Cc General Manager  
Singleton Council



**Transport  
for NSW**



PCU066705

Mr Thomas Watt  
Senior Planning Officer  
Resource Assessments  
Department of Planning & Environment  
GPO Box 39  
Sydney NSW 2001

Dear Mr Watt

**Mount Owen Continued Operations Project Singleton Local Government Area,  
Response to Planning Assessment Commission Review Report**

Thank you for your letter dated 1 June 2016 requesting Transport for NSW (TfNSW) to comment on the above. I apologise for the delay in providing a response.

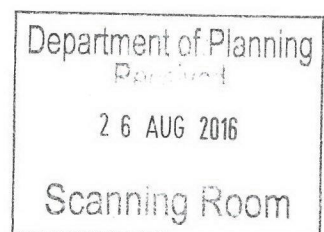
TfNSW has reviewed the documentation and it is advised that the Planning Assessment Commission Review report and corresponding Response report raised no transport related items. TfNSW has no further comments to offer at this stage.

For further information, please don't hesitate to contact Edmond Platon, Transport Planner on 8202 2557.

Yours sincerely

15/8/16

Mark Ozinga  
**Principal Manager, Land Use Planning and Development  
Freight, Strategy and Planning**



CD16/07943