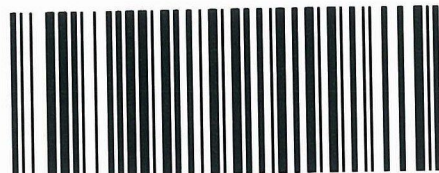




Office of  
Environment  
& Heritage



PCU040368

Your reference: SSD-4966  
Our reference: DOC12/45745; FIL12/12331; Part 4 SSD  
Contact: Steve Lewer, 4908 6814

Mr Paul Freeman  
Senior Planner, Mining Projects  
Department of Planning and Infrastructure  
GPO Box 39  
SYDNEY NSW 2001

Dear Mr Freeman

**RE: REVIEW OF ENVIRONMENTAL IMPACT STATEMENT FOR STRATFORD EXTENSION PROJECT (SSD - 4966).**

I refer to your email dated 1 November 2012 requesting comments and recommended conditions of approval for the 'Stratford Extension Project Environmental Impact Statement' (the EIS). It is noted that the EIS was on public exhibition from 7 November to 19 December 2012.

The Office of Environment and Heritage (OEH) has undertaken a review of the EIS (including appendices) and has provided detailed comments in **Attachment A**. OEH acknowledges that with respect to biodiversity and Aboriginal cultural heritage, the EIS generally addresses OEH's matters of interest, albeit some minor concerns are detailed below:

- clarification of biodiversity and threatened species issues
- management of Aboriginal cultural heritage
- clarification of floodplain issues, including the provision of a detailed flood impact assessment and assessment of potential flooding of the open pit.

In summary, OEH still has minor concerns with some sections of the EIS with respect to biodiversity, Aboriginal cultural heritage, and will require further detail and information in order to properly assess the floodplain management aspects of the proposal. These issues are discussed further in the attachment. OEH has provided some advice with respect to recommended conditions of approval for some of these matters and will provide further advice once these issues have been resolved.

If you require any further information regarding this matter please contact Steve Lewer, Regional Biodiversity Conservation Officer, on 4908 6814.

Yours sincerely

19 DEC 2012

**RICHARD BATH**  
Head – Hunter Planning Unit  
Regional Operations



Enclosures: Attachment A



## **ATTACHMENT A: OEH REVIEW – OUTSTANDING ISSUES**

### **THREATENED SPECIES**

In general, OEH is of the opinion that the reports titled 'Flora Assessment' (Appendix E of the EIS, authored by FloraSearch, April 2012) and 'Terrestrial Fauna Assessment for the Stratford Extension Project' (Appendix F of the EIS, authored by Australian Museum Business Services, May 2012) are adequate, however, the following matters need to be addressed before OEH can offer its full support for this aspect of the proposal:

- further clarification of vegetation survey effort undertaken for the biodiversity offset areas
- further clarification of targeted flora surveys and possible inclusions of additional taxa (i.e. *Callistemon linearifolius* and *Grevillea guthrieana*)
- additional consideration of threatened species and/or ecological community matters.

OEH acknowledges that the proposed biodiversity offset strategy is described in detail in the above two reports, with a summary of the proponents commitments outlined in the general 'Environment Assessment' (Section 4.10.4) and the rehabilitation component detailed in Section 5 'Rehabilitation Strategy'. OEH has reviewed these latter reports and is of the opinion they generally adequately address matters pertaining to conservation offsets, albeit for comments below.

#### **1. Fauna and flora surveys**

OEH acknowledges that the general baseline flora and fauna survey components for the proposal appear to be adequate. This includes the justification for variation aspects of the survey, particularly timing from recommended methodologies. However, OEH notes the following issues which need to be resolved:

##### Flora

With respect to the baseline flora surveys undertaken, OEH notes that main sampling was predominantly done by EcoBiological between 2007 and 2010 (as per Attachment A to Appendix E – 'Flora Survey Report: Stratford Coal Mine, Gloucester, New South Wales'), namely April to May 2007, August 2008 and February to March 2010. These surveys sampled nine broad vegetation / habitat types (i.e. stratification unit), comprising 90 quadrats (as detailed in Table 1 of the EcoBiological report), which OEH concurs meets the survey efforts requirements as specified in OEH guidelines (DEC 2004, DECC 2009), including optimal timing for sampling (i.e. autumn / late autumn for summer flowering species and spring). Additional quadrat sampling was undertaken in January and April 2011 by FloraSearch, which included a further 26 rapid data points. As such OEH is of the opinion that the flora surveys undertaken for the project meet OEH survey guidelines with respect to timing, survey effort per stratification unit and methodologies utilised (e.g. quadrats, rapid assessment points and random meanders). OEH notes that the flora surveys identified 15 native vegetation types (including disturbed variants) within the project area and surrounds, as schematically shown on Figure 5 of FloraSearch report, which are described in detail in Section 3.1 of this report. A further five modified or non-native vegetation types were also identified.

However, OEH is unclear whether or not the proposed 'biodiversity offset areas' has received a similar level of sampling effort as the development footprint. OEH notes that Attachment B to Appendix E – 'Stratford Surrounds Flora Survey' (prepared by Australian Museum Business Services, December 2011) provides details of the flora survey(s) undertaken to inform a vegetation classification (via multivariate analysis – PATN) and mapping product of the proposed biodiversity offset areas. This attachment states that the survey was undertaken in accordance with OEH guidelines, to which OEH is of the opinion appears correct. However, OEH is uncertain as to whether or not the survey effort per stratification is compliant with OEH survey guidelines, given that no specific details are given. Figure 3 of Attachment B shows the location of the surveys sites (both full floristic quadrats and rapid data points) on the proposed biodiversity offset areas, however, the vegetation types are not overlain on this figure and as such it is difficult to assess



whether or not all vegetation types have been adequately surveyed. Therefore, OEH recommends that the proponent provides a table that details survey effort per stratification unit / vegetation type, clearly showing the size of each sample unit and the number of sampling points undertaken in these units (i.e. no. of quadrats per vegetation type). This will enable OEH to determine whether or not the minimum survey requirements as specified in our survey guidelines (DEC 2004, DECC 2009) have been met.

## Fauna

OEH has reviewed the 'Terrestrial Fauna Assessment for the Stratford Extension Project' (Appendix F of the EIS, authored by Australian Museum Business Services, May 2012) and its various appendices and is of the opinion that the fauna survey effort undertaken appears to be in accordance with OEH survey guidelines (DEC 2004). Tables 2 to 9 provide details of the survey effort against broad habit types, which is considered adequate for OEH to assess level and suitability of survey effort, techniques utilised and survey timing (including climatic conditions). Similarly, Tables 11 and 12 provide details of survey effort in the wider area around the project area, which includes the proposed biodiversity offset areas. OEH is of the opinion that the baseline fauna surveys conducted, including species-specific targeted searches are adequate to inform the EIS and permit OEH to assess likely impacts on threatened species and their habitats.

## **2. Targeted surveys – flora**

OEH notes that the main flora surveys were conducted over three seasons between 2007 and 2011 – April to May 2007, August 2008 and February to March 2010, with additional quadrat sampling in January and April 2011. These surveys comprised of quadrat sampling, rapid data points and random meanders, with the latter predominantly used for targeted searches of threatened species. Table 5 in Appendix E and Table 2 in Attachment A (the EcoBiological flora report) provides a list of the threatened flora species that were targeted, providing details of their general habit and habitat preferences, including species specifically referred to in the DGRs: *Asperula asthenes*, *Cynanchum elegans*, *Eucalyptus glaucina*, *Melaleuca groveana*, *Pomaderris queenslandica*, *Senna acclinis*, and *Syzygium paniculatum*. This table does not indicate optimal survey times, with respect to species that require flowers and/or fruits for identification, such as the more cryptic taxa (e.g. small herbs and orchids), nor does it indicate which habitats / vegetation types on the subject site were targeted or the level of survey effort undertaken. OEH acknowledges that Table 27 in the Appendix E provides some scant details of broad habitats that were searched for potential threatened flora, however, this table does not indicate which specific habitats / niches that were searched nor which areas were specifically targeted on the proposal and/or surrounds.

OEH notes that Appendix E of the EIS implies the level of surveying was adequate in detecting whether or not threatened flora likely occurred on the subject site and or within the study area (i.e. surrounds), suggesting that the baseline flora surveys were used to target threatened species. However, OEH is of the opinion that surveys based predominantly on quadrat sampling are not regarded as a suitable sampling technique for detecting threatened species, given that these species are generally rare in the landscape and that quadrats only sample a very small area of the landscape. OEH acknowledges that Attachment A (by EcoBiological) provides further clarity on the targeted searches, indicating that random meanders were utilised, but no details are provided on timing (i.e. when the searches were specifically carried out) and what vegetation types / habitats were targeted. The random meanders are schematically shown on Figure 3 of Attachment A, however, OEH is unable to determine whether or not they adequately cover all likely habitats / habitat types, and as such meet OEH survey guidelines. OEH recommends that further details need to be provided, as described below.

In general, OEH acknowledges that in all likelihood, given the range of dates provided, that adequate targeted surveying may have been completed, however, the EIS needs to clearly match these survey dates to the each different species targeted. OEH needs to be certain that each potential threatened flora was sampled at the appropriate time, particularly cryptic taxa that requiring flowers and/or fruits to positively identify them. Similarly, OEH requests that the proponents indicate for each targeted species which specific habitats were searched, as this will enable OEH to assess whether all likely habitats were targeted.



To determine the adequacy of such targeted flora surveys OEH requests the proponent provide details on location, survey methodology (e.g. observation technique, random meander, parallel belt transects etc...), timing, seasonal / climatic conditions, duration / effort and habitats searched be provided (as per OEH guidelines – DEC 2004); similar to that provided for the general baseline flora surveys. OEH requests that this information be provided for each likely species individually and should include schematic representations of the survey effort and habitats searched (i.e. individually mapped). If surveys are inadequate, then OEH recommends appropriately timed targeted surveys in accordance with OEH guidelines (DEC 2004) must be undertaken for all potential taxa not adequately targeted, particularly cryptic taxa which require flowers and/or fruit for identification (\*Note: the following should be used as a guide to optimal times for surveying):

- **Trailing Woodruff (*Asperula asthenes*)** – flowers and fruits in spring (Thompson 2009); fruits are required to separate genera *Asperula* and *Galium* (Harden 1992).
- **Netted Bottle Brush (*Callistemon linearifolius*)** – flowers spring to summer (Harden 2002), though Benson & McDougall (1998) note predominantly October to November.
- **White-flowered Wax Plant (*Cynanchum elegans*)** – flowers August to February (-May), with a peak in November; and mature fruits appear between December and May (Benson & McDougall 1993).
- **Leafless Tongue Orchid (*Cryptostylis hunteriana*)** – known to flower between November and February; Nicholls 1938, Jones 1993 and Harden 1993 state that in NSW flowering generally occurs from December to February, with Bell (2001) quoting an earlier November flowering period for Central Coast populations (i.e. Freeman's Waterhole, Vales Point and Wyee).
- **Slaty Red Gum (*Eucalyptus glaucina*)** – flowers from September to November (Brooke & Kleinig 1999); although locally frequent it is restricted to these areas, where it is known to hybridise with the closely allied red gum – *Eucalyptus tereticornis* (e.g. Taree area). It can be distinguished by its angled (quadrangular) younger branchlets which have persistent angle striations on older growth (K. Hill [RBG] correspondence sent to OEH).
- **Guthrie's Grevillea (*Grevillea guthrieana*)** – flowers in spring (Harden 2002).
- **Grove's Paperbark (*Melaleuca groveana*)** – flowers spring (Harden 2002).
- ***Pomaderris queenslandica*** – flowers in spring – summer (Stanley & Ross 1986), with buds apparent for many months before flowers open; NPWS (2002) note flowering occurs specifically between October to November.
- **Rainforest Senna (*Senna acclinis*)** – flowers spring and summer (Harden, 2002).
- **Magenta Lilly Pilly (*Syzygium paniculatum*)** – flowers December to January / March (Harden 2002, Benson & McDougall 1998), though mature fruits are required to positively identify this species, which mature in May (Payne 1997).

OEH notes that Table 2 in Attachment A (the EcoBiological flora report) lists two species which OEH is of the opinion are incorrect, and as such the 'suggested likely species' in bold below may also require appropriate targeted surveys (as per above recommended survey times):

- *Callistemon viminalis* is not a threatened species listed under the *Threatened Species Conservation Act 1995*, it is a common species which occurs in the north-eastern part of NSW. OEH suggest the likely threatened species requiring targeted surveys is ***Callistemon linearifolius*** (Netted Bottlebrush) which is known from Bulahdelah area.
- *Grevillea obtusiflora* is not a species known to occur in the Gloucester – Stroud Valley, it is restricted to the Central Tablelands. OEH notes that ***Grevillea guthrieana*** (Guthrie's Grevillea) is known from the Booral area, to the west of Bulahdelah, and is likely the species that should be targeted.

### 3. Threatened species assessment

OEH has completed a review of the biodiversity and threatened species sections (including the 'assessment of significance' components) of the two main biodiversity reports (i) 'Flora Assessment' (Appendix E, including attachments) and (ii) 'Terrestrial Fauna Assessment for the Stratford Extension Project' (Appendix F, and attachments). OEH generally concurs with the report conclusions and is of the opinion that the proposed conservation offset utilising OEH's offsetting principles ('Principles for the use of biodiversity offsets in NSW') will likely provide commensurate or better compensatory habitat than that identified on the proposal.

Nevertheless, OEH has identified the following minor matters that require clarification and/or additional assessment:



- Subtropical coastal floodplain forest of the NSW North Coast bioregion - endangered ecological community (EEC): OEH concurs with the EIS that the 'Cabbage Gum Paperbark Sedge / Grass Forest (as described in Table 11, Section 3.1.4 of Appendix E)' does not represent 'River-flat Eucalypt Forest on coastal floodplains', as assessed in Section 3.6.1 of Appendix E. OEH is of the opinion that this 'Cabbage Gum Paperbark Sedge / Grass Forest' community may actually represent the 'Subtropical coastal floodplain forest of the NSW North Coast bioregion EEC'. OEH notes the following similarities of this EEC with the 'Cabbage Gum Paperbark Sedge / Grass Forest' (as per the NSW Scientific Committee Final Determination 2005 and Table 11 of Appendix E):
  - there are close similarities between the 'dominant and characteristic species' listed in Table 11 and Paragraph 1 of the EEC Final Determination. OEH notes that of the six listed canopy species in Table 11, four of the trees (*Angophora subvelutina*, *Eucalyptus amplifolia*, *E. moluccana* and *E. tereticornis*) are listed in Paragraph 1, with *E. tereticornis* considered a dominant species of this EEC. Similarly the Final Determination notes that this EEC may be characterised by a small layer of trees, including *Melaleuca*, to which OEH notes Section 3.6.1 states that small trees (*Melaleuca*) are a prominent part of the understorey for the Cabbage Gum Paperbark Sedge / Grass Forest community
  - OEH concurs that the site may not be on alluvial soils, but notes that Paragraph 1 of the Final Determination indicates that the EEC may occur on localised river flats up to 250 m elevation. Section 3.6.1 states that the Cabbage Gum Paperbark Sedge / Grass Forest community is at approximately 120 to 130 m AHD and that it is on a smaller watercourse.

OEH is of the opinion that Cabbage Gum Paperbark Sedge / Grass Forest community on the subject site has some affinity with the aforementioned EEC, and as such recommends that the proponent further investigate this. If the Cabbage Gum Paperbark Sedge / Grass Forest is the EEC, OEH would expect the proponent to conduct an appropriate 'assessment of significance' given that the proposal will result in the approximate loss of 13.5 hectares of this community and ensure that the biodiversity offset package suitably caters for its loss (i.e. the offset area contains this community commensurate with the subject site).

- Threatened Flora: If additional threatened flora are considered likely to occur on the subject site, particularly those species possibly missed or not considered, such as *Callistemon linearifolius* and *Grevillea guthrieana* (as described above), then OEH recommends that the proponent will need to conduct further assessment with respect to potential impacts. If this assessment concludes that a significant impact is likely, then OEH would prefer impacts are avoided or at a minimum the proposed biodiversity offsets conserves suitable habitat and/or known locations.

#### 4. Provision of offsets / compensatory habitat

OEH notes that the EIS has provided details of the biodiversity offset package in Section 6 of the 'Flora Assessment' (Appendix E, including attachments) and Section 7 of the 'Terrestrial Fauna Assessment for the Stratford Extension Project' (Appendix F, and attachments). OEH acknowledges that the biodiversity offset proposal has utilised OEH's offsetting principles ('Principles for the use of biodiversity offsets in NSW' [www.environment.nsw.gov.au/biocertification/offsets.htm](http://www.environment.nsw.gov.au/biocertification/offsets.htm)) and that the proponent's ecological consultants (Resource Strategies and Australian Museum Business Services) have liaised with OEH in developing the biodiversity offset proposal. OEH has also inspected all three offset areas and is of the opinion that they represent vegetation types and habitats that are commensurate with the subject / development site.

OEH has reviewed the biodiversity offset proposal as presented in the EIS and is of the opinion that it has adequately addressed our offset principals and as such represents a suitable compensatory package of vegetation types and habitats that are proportionate or better than those that will be lost from the subject site. OEH supports the use of a Conservation Agreement under the *National Parks and Wildlife Act 1974* (NPW Act) to conserve and manage the proposed areas in perpetuity. Under this scenario an appropriate management plan will be developed and endorsed by OEH during its appraisal of the 'conservation agreement'. OEH only concern with respect to this proposal is that DP&I, as consent authority, ensures that



the twelve (12) month timeframe proposed by the proponent in conserving the proposed offset lands is adhered to.

OEH acknowledges that a proportion of the proposed offset will include the rehabilitation of derived vegetation types, namely degraded grasslands or pastures. Given the inherent nature of these vegetation types, in that they have low biodiversity values, it is unlikely that they will be initially considered suitable for conservation under a 'conservation agreement'. It is likely that OEH would wish to wait until such lands are appropriately rehabilitated before OEH enters into a 'conservation agreement' on them. As such OEH recommends that DP&I ensure that another appropriate conservation mechanism is utilised (i.e. until they have revegetated), to ensure their long-term conservation. OEH would expect that this will also include appropriate conditions of approval that ensures management is orientated towards revegetation and conservation in perpetuity.

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- NPWS (2002) *Brigalow Belt South Bioregion Targeted Flora Project: Botanical Expert Review*. Unpublished report. (NSW National Parks and Wildlife Service, prepared by Western Regional Assessment Unit, Dubbo).
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## ABORIGINAL CULTURAL HERITAGE

A review of the EIS, including Sections 4.12, 7.3.7 and Appendix I titled: 'Stratford Extension Project - Aboriginal Cultural Heritage Assessment - Gloucester Shire Local Government Area' (dated February 2012) was undertaken by OEH to assess the potential impacts of the project on Aboriginal cultural heritage, in accordance with OEH's Aboriginal cultural heritage assessment guidelines and the requirements of Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act).

### 1. Aboriginal cultural heritage values

OEH acknowledges the significance of the local environment to the local Aboriginal community. OEH notes the existence of numerous registered Aboriginal sites in the immediate locality and acknowledges that the project area contains landforms which have yielded a significant volume of evidence of Aboriginal occupation. Evidence includes artefact scatters, camp sites, potential artefact deposits (PADs), stone arrangements, grinding grooves, burials, ceremonial areas, culturally modified trees and isolated finds.



There is also a possibility that currently undetected cultural material may be present within the project area in those landscapes where Aboriginal objects have not been previously identified. This includes those areas in the vicinity of Dog Trap Creek associated with the proposed road alignment. The proponent's archaeological consultant also supports this view.

OEH also acknowledges the results of previous field assessments of the project area which identified three Aboriginal sites, an isolated find and two artefact scatters. The results of current field assessments of the project area during October/November 2011 are also noted. These assessments identified a further 12 sites (including artefacts scatters, isolated finds and culturally modified trees), two PADs and one potential cultural/traditional area.

## **2. Impact assessment**

OEH refers to Section 4.12.2 of the EIS and Section 14 of the Aboriginal Cultural Heritage Assessment. It is noted that the project is likely to impact or harm 10 Aboriginal sites associated with the project area, including culturally modified trees, artefact scatters and isolated finds. It is therefore expected that the proponent develop culturally appropriate management strategies in consultation with the seven registered Aboriginal parties (RAPs) for the project.

## **3. Management of likely impact on Aboriginal cultural heritage values**

OEH refers to Section 4.12.3 of the EIS and Section 15 of the Aboriginal Cultural Heritage Assessment. OEH notes that the proponent has developed a range of management, mitigation measures and to address the likely impacts from the development proposal on Aboriginal cultural heritage values. These measures include the development of a Heritage Management Plan (refer to additional comments below), salvaging objects, demarcating sites from construction activities, ongoing consultation, access opportunities, cultural heritage induction program, monitoring and further investigations/inspections during construction. OEH understands that these strategies will be undertaken in consultation with the RAPs developed for the project. OEH has recommended conditions of approval in below to address these matters

OEH refers to the proposed management of the two culturally modified trees likely to be impacted by the development. It is noted that these two trees, identified as 'ST-2' and 'ST-4', will be subject to salvage for safekeeping in consultation with the RAPs. OEH supports this process, however, it is recommended that a clear and transparent process is developed to ensure any actions implemented are culturally respectful. The aim of the process should be to preserve the scars in perpetuity and then store in a suitably safe location which can be accessed by all RAPs, as required. Evidence of any consultation undertaken should be collated by the proponent and provided to the consent authority if required. If the trees are removed from the project area the proponent will be required to manage the transfer process in compliance with Sections 85A1(c) and 89A of the NPW Act. This would involve the application to OEH for the Transfer of Aboriginal Objects for Safekeeping and recording of Aboriginal Site Impact Recording Forms. Refer to:

- [www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf](http://www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf)
- [www.environment.nsw.gov.au/resources/cultureheritage/120558asirf.pdf](http://www.environment.nsw.gov.au/resources/cultureheritage/120558asirf.pdf).

OEH also notes that a number of additional Aboriginal sites likely to be impacted by the development proposal will be managed via salvage activities. The proponent is also reminder that they will be required to manage these processes in compliance with the requirements of Sections 85A1(c) and 89A of the NPW Act. These actions/procedures should also be detailed in the proposed Heritage Management Plan.

OEH refers to Section 4.12.3 of the EIS and Section 15.2 of the Aboriginal Cultural Heritage Assessment. It is noted that a monitoring program will be implemented for site 'CTS-1' when blasting is likely to occur within one kilometre of the site. OEH recommends that the RAPs are also provided with an opportunity to develop and participate in this process. The focus of initial consultation should discuss the cultural values and significance of the site and ascertain the amount of assessment/monitoring deemed necessary to accurately measure whether these values have been impacted by the project. The monitoring program should also consider pre-blasting base line data confirming the status of all relevant geomorphological and



hydrological aspects of the site. This may also involve the installation of appropriate monitoring equipment. Any results of strategies developed should be reported to all stakeholders prior to initiating the program.

Further, if the monitoring program identifies any impact as a result of mining activities, the proponent should immediately report the incident to the consent authority and OEH. All stakeholders should then be consulted to develop and implement an appropriate management/mitigation strategy which complies with the requirements of the *Environmental Planning and Assessment Act 1978* and the NPW Act. These actions/procedures should also be detailed in the proposed Heritage Management Plan.

OEH acknowledges that there is a likelihood of finding further evidence of Aboriginal occupation of the river terrace adjacent to Dog Trap Creek as part of the realignment of Wenham Cox Road. To manage the potential impact on Aboriginal objects associated with this area, OEH notes that the proponent proposes to conduct an inspection program of the stripped topsoil in order to determine whether any Aboriginal objects are present in this location. OEH supports this process, however, it is recommended that the proponent provide the RAPs with a fair, reasonable and timely opportunity to participate in this process. Any OH&S or WorkCover matters should be addressed prior to implementing the program. Records should be collected of any attendance and results accurately documented. It is also recommended that triggers for further investigations are included if significant cultural finds are identified. For example: human remains, hearths, knapping floors, rare artefacts, etc.

In the event that additional Aboriginal objects are uncovered during the inspection program, the objects are to be recorded and managed in accordance with the requirements of Sections 85A1(c) and 89A of the NPW Act. These actions/procedures should also be detailed in the proposed Heritage Management Plan.

#### **4. Local Aboriginal community consultation**

OEH notes that the proponent has provided in Appendix 1 of the Aboriginal Cultural Heritage Assessment, a summary of the consultation undertaken and comments received from the RAPs for this project. Although these summaries provide some general agreement with the assessment undertaken to date, Appendix 3 details only one letter of advice from the RAPs following the review of the draft Aboriginal Cultural Heritage Assessment.

OEH therefore encourages the proponent to continue to engage with the RAPs in maintaining appropriate cultural heritage outcomes for the proposed development. As a general rule, gaps in the consultation process of six months or more will not constitute a continuous consultation process. Where a proponent envisages a gap of more than six months it is recommended that RAPs are regularly informed of any progress. OEH has included below a recommended condition of approval to address this matter.

#### **5. Heritage management plan**

OEH acknowledges and supports the proponent's commitment to developing and implementing a Heritage Management Plan for the project area in order to support the management of the potential impacts on Aboriginal cultural heritage. It is also acknowledged that the plan is to be developed in consultation with the RAPs parties for the project.

The Heritage Management Plan must be developed by a suitable qualified cultural specialist with experience in the management of Aboriginal cultural heritage values. The Heritage Management Plan must clearly demonstrate that effective community consultation with local Aboriginal communities has been undertaken in the development and implementation of the plan. OEH encourages the proponent to maintain continuous consultation processes with the community for the entire life of the project and for all Aboriginal cultural heritage matters associated with the project area. Evidence of consultation and views of the community in the development of the Heritage Management Plan should be included in its final iteration.

OEH also recommends that the Heritage Management Plan includes procedures for ongoing Aboriginal consultation and involvement, management of all Aboriginal cultural heritage values associated with the project area, the responsibilities of all stakeholders, details of proposed mitigation and management



strategies of all sites; including any additional investigation/survey processes, salvage activities, monitoring, management of impacted sites, etc; procedures for the identification and management of previously unrecorded sites (including human remains), details of an Aboriginal Cultural Heritage Education Program for all contractors and personnel associated with construction activities and compliance procedures in the unlikely event that non-compliance with the Heritage Management Plan is identified. OEH has included a recommended condition of approval to address these matters.

## **6. Legislative requirements**

The importance of protecting Aboriginal cultural heritage is reflected in the provisions of the NPW Act. Please note that the requirements of the NPW Act have been amended. It is therefore strongly recommended that the proponent familiarises itself with the new requirements during the development and any subsequent assessment and/or development processes.

## **7. Conclusion**

OEH has no additional concerns with the Aboriginal cultural heritage assessment for the project application and recommends that the following conditions of approval for Aboriginal cultural heritage are reflected in any approval conditions for the project.

### **RECOMMENDED AMENDED CONDITIONS OF APPROVAL FOR ABORIGINAL CULTURAL HERITAGE**

1. The proponent must consult with and involve all the registered Aboriginal parties for the project, in the ongoing management of the Aboriginal cultural heritage values. Evidence of this consultation must be collated and provided to the consent authority upon request.
2. The proponent must prepare a Heritage Management Plan to detail procedures for managing the Aboriginal cultural heritage values associated with the project area. The Heritage Management Plan is to be implemented in consultation with the registered Aboriginal parties. The plan must also detail the involvement and responsibilities of the Aboriginal stakeholders in the implementation of all cultural heritage management actions; details of the responsibilities of all other stakeholders; details of all mitigation and management strategies (including salvage, monitoring programs, inspection programs, avoidance measures, etc); procedures for the identification and management of previously unrecorded sites (including human remains); details of the long term management of any Aboriginal objects salvaged through the development process; details of the Aboriginal Cultural Heritage Education Induction Program for all contractors and personnel associated with construction activities; and compliance procedures in the unlikely event that non-compliance with the Heritage Management Plan is identified. This process must be undertaken prior to commencing any ground disturbance or development works subject to the development.
3. All Aboriginal sites impacted by the project must have an Aboriginal Site Impact Recording form completed and be submitted to the Aboriginal Heritage Information Management System (AHIMS) register within three (3) months of being impacted.
4. If human remains are located in the event that surface disturbance occurs, all works must halt in the immediate area to prevent any further impacts to the remains. The NSW Police are to be contacted immediately. No action is to be undertaken until the NSW Police provide written notification to the proponent. If the skeletal remains are identified as Aboriginal, the proponent must contact the OEH's Environment Line on 131 555 and representatives of the local Aboriginal community. No works are to continue until the OEH provides written notification to the proponent.
5. An Aboriginal Cultural Education Induction Program must be developed for the induction of all personnel and contractors involved in the construction activities on site. Records are to be kept of which staff/contractors were inducted and when for the duration of the project. The program should be developed and implemented in collaboration with the registered Aboriginal parties.



## **FLOODPLAIN MANAGEMENT**

The DGRs, with respect to flooding, requires the proponent to undertake a detailed flood impact assessment, which identifies impacts on local flood regimes, including:

- an assessment of the potential for flooding to occur in the open cut pits
- any measures proposed to mitigate potential flood impacts.

It also provides a list of Technical and Policy Guidelines that could be relevant in assisting the preparation of the EIS with respect to flooding, including reference to the Floodplain Development Manual (DIPNR) and Floodplain Risk Management Guidelines (DECC).

**Item 13** of the Table on page B9 in Appendix B 'Surface Water Assessment' merely indicates that the Floodplain Development Manual was not considered relevant to assessing flood impacts as there are no properties outside those owned by the proponent that could be affected by mine infrastructures in any floodplain. However, whilst this may be correct it is noted that:

- no flood impact assessment has been undertaken in the EIS or any description provided of the flood behaviour to support this conclusion
- no assessment has been undertaken of the potential for flooding in the open cut pits. Proposed measures to mitigate potential flood impacts in the open cut pits appears to be related to mitigation from runoff rather than flooding from adjacent creeks.

Apart from the potential disruption to mining operations, flooding in the open cut pits could result in untreated contaminated water being released into the adjacent waterways.

**Item 14** indicates that the Floodplain Risk Management Guideline(s) was not considered relevant to this assessment as the project is outside areas which could be affected by current sea level rise predictions and there are no properties outside those owned by the proponent that could be affected by mine infrastructure in any floodplain.

The relevant guideline dealing with sea level rise is the 'Flood Risk Management Guide: Incorporating sea level rise benchmarks in flood risk assessments'. While the location of the mine is outside the area which could be affected by sea level rise, the Guide also indicates allowances for the potential impact of climate change on flood producing rainfall events may apply. In undertaking flood studies, it is generally advised by OEH that a sensitivity analysis be undertaken of the potential impact on flood levels due to an increase in rainfall and run off intensities of 10%, 20% and 30% for the 1 in 100 year event. It is noted that no sensitivity assessment for increase in rainfall and runoff intensities due to climate change on either local flooding or flooding of the pits has been considered.